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D. K. MINOR, PROPRIETOR.] FOR MARCH, 1833. [SAMUEL FLEET, EDITOR.

NEW PUBLICATIONS.

Historical and Descriptive Account of British India, from the Most Remote Period to the Present Time. With Maps and Engravings. In 3 vols. 18o. New-York, J. & J. Harper, 1832.

These volumes constitute numbers of the well known and highly estimated Family Library. Their contents, which are the productions of the most eminent and distinguished scientific writers that adorn the age, embrace the early European voyages; revolutions in the Mogul empire; origin, progress and establishment of the British power; illustrations of the zoology, botany, climate, geology, mineralogy, and other interesting subjects.

It strikes the mind as an extraordinary event that a private trading company, consisting of only a few individuals, should, from an investment sufficient only to fit out three vessels, continue to increase until not only the trade of a kingdom of 1800 miles long and 1500 broad, with a population of 30,000,000, was engrossed, but its revenues and subjugation secured. This is the case with the British East India Company in respect to Hindostan. This extensive and important country constitutes a part of the British empire, under the government of the company.

Hindostan India is enclosed by very grand natural boundaries. The climate is various—embracing the torrid, and that intervening to the region of perpetual snows. The productions of course are as varied as the climate. The aspect and soil present all that variety which is found in a level region overflowed by large rivers, marshes, deserts, table lands, and mountain declivities.

Our limits will not permit us to make any extracts on the early voyages made to this country, however interesting they might be to our readers. The following paragraph may serve to convey an idea of the motives which influenced the early adventurers, as well as a truth in political economy bearing on the subject which now agitates our own country:

From the first dawn of maritime enterprise and adventure in Britain, the trade of India was contemplated as its grandest object,—the chief fountain of commercial wealth. Into the sanguine conceptions formed on this subject there enter, no doubt, a considerable degree of illusion. A more enlightened school of political economy seems to have demonstrated that agriculture and manufactures open more copious sources of prosperity than traffic of any description; that the home trade, from its quick returns, is more productive than the foreign; and the intercourse between closely contiguous countries more valuable than that with distant regions. A commerce, therefore, of which the market is at the opposite extremity of the globe, can never do more than employ the surplus capital of an already wealthy community. Yet there were circumstances which, even at this early stage of mercantile enterprise, threw a peculiar lustre on the trade of India. The staple articles consisted of finer and richer fabrics than any that had yet been produced in the West; diamonds, pearls, jewels, the most beautiful and brilliant; spices, also, the most fragrant and grateful to the senses. The great scale, too, on which operations were conducted, and the large fortunes accumulated in certain instances, gave to this traffic a character of grandeur not belonging to the smaller transactions which took place within the limits of Britain or of Europe. Even the mysterious remoteness of the regions that were to be the theatre of this intercourse, the train of adventure and uncertainty through which they were to be reached, heightened their attraction, and were altogether congenial to the spirit of that bold and enterprising age.

We must refer our readers to the volumes themselves for the interesting accounts of the revolutions, wealth, and grandeur of the Mogul empire. The following records a rural improvement, and serves to give a a view of the extent of the kingdom:

Meantime, Shere had become undisputed master of the empire, and extended its limits on every side. He swayed the sceptre wisely and well, at which the Mogul historians are astonished, considering the treason by which he gained it; but Shere, as a Patan, owed only a very slight allegiance to the house of Baber. His arrangements for the accommodation of travellers, which in the East devolve generally upon the sovereign, were on a scale of which no former reign afforded an example. Across the entire breadth of Hindostan, from the Ganges to the Indus, a space of three thousand miles, there was formed a high road bordered with fruit trees, with a well at every two miles, and caravansaries at every stage, where the traveller was accommodated at the public expense.

The wars in which the company's troops were engaged with the native powers, as well as with those of the Dutch, Portuguese, and French settlements, are interesting, particularly as this country is destined to assume more and more importance in the scale of nations. These we pass over, and proceed to the portions of information relative to Natural History. Out of compliment to the ladies we make the following extract. In speaking of the elephant the writer says,,

A large elephant weighs from six to seven thousand pounds, and we may easily conceive that when journeying through the forests with any very special object in view, he must force his way through all intervening obstacles, more after the manner of a steam engine than of any mere animal force of which we have a clear and accustomed conception.

"Trampling his path through wood and brake,
And canes which crackling fall before his way,
And tassel-grass, whose silvery feathers play,
O'ertopping the young trees,
On comes the elephant, to slake
His thirst at noon in yon pellucid springs.
Lo! from his trunk upturn'd, aloft he flings
The grateful shower: and now,
Plucking the broad leav'd-bough
Of yonder plume, with waving motion slow,
Fanning the languid air,
He waves it to and fro."

The new-born elephant measures about 35 inches high; he grows about eleven inches during the first year; eight in the second; five in the fifth; three and a half in the sixth; and two and a half in the seventh. He takes from twenty to thirty years to attain his full growth.

It has been said that the invention of gunpowder in the practice of war, and the application of steam to machinery, have superseded the uses of this great living engine. It is still, however, extensively used in the East for a variety of purposes, and Bernier in his Travels has given a spirited description of a grand procession of Aurengzebe's retinue. The conveyance of the "lovely and distinguised females" seems chiefly to have attracted the observance of the lively Frenchman. "I cannot avoid," he observes, "dwelling on this pompous procession of the seraglio. It strongly arrested my attention during the late march, and I feel delight in recalling it to my memory. Stretch imagination to its utmost limits, and you can conceive no exhibition more grand and imposing than when Rochinara Begum (Aurengzebe's sister) mounted on a stupendous Pegu elephant, and seated in a mik-dember blazing with gold and azure, is followed by five or six other elephants with mik-dembers nearly as resplendent as her own, and filled with ladies attached to her household. Close to the princess are chief eunuchs, richly adorned and finely mounted, each with a cane in his hand; and, surrounding her elephant, a troop of female servants from Tartary and Cashmere, fantastically attired, and riding handsome padhorses. Besides these attendants are several eunuchs on horseback, accompanied by a multitude of pagys or lackeys on foot, with large canes, who advance a great way before the princess both to the right and to the left, for the purpose of clearing the road and driving before them every intruder. Immediately behind Rochinara Begum's retinue appears a principal lady of the court, mounted and attended much in the same manner as the princess. This lady is followed by a third; she by a fourth; and so on, until fifteen or sixteen females of quality pass, with a grandeur of appearance, equipage, and retinue, more or less proportionate to their rank, pay, and office. There is something very impressive of state and royalty in the march of these sixty or more elephants, in their solemn, and, as it were, measured steps; in the splendor of their mik-dembers, and the brilliant and innumerable followers in attendance: and if I had not regarded this display of magnificence with a sort of philosophical indifference, I should have been apt to be carried away by the similar flights of imagination as inspire most of the Indian poets, when they represent the elephants as conveying as many goddesses concealed from vulgar gaze."

It appears, however, that these journeys are not always unattended by danger, for Bernier was himself an eye-witness of the following sad catastrophe:—"The king (Aurengzebe) was ascending the Peer-Punchal mountains, from which a distant view of the kingdom of Cashmere is first obtained. He was followed by a long line of elephants, upon which sat the ladies in mik-dembers and amaris, (seats with canopies). The foremost, appalled, as it is supposed by the great length and acclivity of the path before him, stepped back upon the elephant that was moving in his track; who again pushed against the third elephant, the third against the fourth, and so on, until fifteen of them, incapable of turning round or extricating them-

selves in a road so steep and narrow, fell down the precipice. Happily for the women, the place where they fell was of no great height; only three or four were killed; but there were no means of saving any of the elephants. Whenever these animals fall under the immense burden usually placed upon their backs, they never rise again, even on a good road. Two days afterwards we passed that way, and I observed that some of the poor elephants still moved their trunks."

We shall now proceed with extracts which we deem interesting and useful to our readers:

Wild boars are among the most ferocious of the animals of India. They chiefly inhabit the woods and jungles; but when the grain is nearly ripe they occasion great damage in the corn-fields, and still more among the sugar plantations, as they are extremely fond of canes. Their irascible nature is indeed remarkable for creatures of an herbivorous disposition, and their pursuit and capture is consequently not unattended by personal danger.—They are spread over a vast tract of eastern territory, and exist in great abundance in the archipelago of the Papuas, to the north of the Moluccas, and the westward of New-Guinea. It would even appear that two wild species occur in the Celebes, (independent of Sus babyrussa,) and some writers maintain the opinion that there exists in the Indian and Chinese dominions a species of wild boar distinct from that of Europe, and the more probable source from which the Siamese breed and that of China have been derived. Thus if the domestic races peculiar to, or characteristic of, the northern and temperate part of Europe have sprung, (as we think cannot be doubted,) from the wild boar (Sus aper,) we shall have three distinct sources from which to trace the rise and progress of domestic swine.

The musk-deer (genus *Moschus*) are the only other tribe which we include among the hornless ruminants of Asia. Of these, the musk-deer, *par excellence* (*M. moschiferus*), is one of the most remarkable. Although the drug called musk has been known throughout Central Asia from time immemorial, it does not appear that the animal which produced it was known to the ancients, or indeed in any way identified till it was described by Abuzeid Serassi, an Arabian author, who stated that it was a deer without horns. A knowledge of it was introduced in Western Europe by Serapion, who flourished in the eighth century. It is nearly the size of a roebuck, with an exceedingly short tail, and covered by a very coarse coat. Its native regions are the alpine tracts of Central Asia, where it dwells amid barren rocks and perpetual snows, descending occasionally to the region of the pines. It is a nocturnal animal, of solitary disposition, and extremely timid. The province of Thibet is the most renowned for the superior quality of its musk. This prized perfume is obtained from a small bag, situated in the lower region of the abdomen of the male. The flesh, though strongly impregnated with a musky odor, is also much esteemed.

We may here mention a remarkable species, called the chiru (*Antilope Kemas?* Smith), an inhabitant of the inaccessible and piny regions of Chandany, which verge on the eternal snows of the Himmaleh mountains. It is sometimes found with only a single horn, and that accidental condition is supposed to have given rise to the belief in monocerotes or unicorns,—animals which all who are acquainted with the structure of the scull, and the position of the frontal sutures, must also know to be incapable of existing without a violation, we may almost term it, of the laws of nature. This species is remarkable for an abundant coating of wool, a provision which beautifully coincides with its position as a mountain dweller in a cold and icy clime. The characters of the female are still unknown. The male is nearly six feet long, and measures about three feet in height at the shoulder; the croup is higher than the withers; the horns are black, slender, slightly lyre-shaped, annulated, with sharp points turned forwards. The hair is thick and coarse, but conceals beneath it a finer covering of downy wool. The face and legs are dark, the neck and back greyish slate-color, passing to rufous, and the belly, insides of the limbs, and tip of the tail are white.

Two biparies, or carriers of grain and merchandise on the backs of bullocks, were driving a loaded string of these animals from Palamow to Chittrah. When they were come within a few miles of the latter place, a tiger seized on the man in the rear, which was seen by a *guallah* (herdsman) as he was watching his buffaloes grazing. He boldly ran up to the man's assistance, and cut the tiger very severely with his sword; upon which he dropped the biparie, and seized the herdsman. The buffaloes, observing it, attacked the tiger and rescued the herdsman; they tossed him about from one to the other, and, to the best of my recollection, killed him. Both the wounded men were brought to me: the biparie recovered, but the herdsman died."

The whip snake is common in the Concan, where it conceals itself among the foliage of trees, and darts at the cattle grazing below, generally aiming at the eye. A bull, which was thus wounded at Dazagon, tore up the ground with extreme fury, and died in half an hour, foaming at the mouth. This habit of the reptile is truly singular,—for it seems to proceed neither from resentment nor from fear, nor yet from the impulse of appetite; but seems, "more than any other known fact in natural history, to partake of that frightful and mysterious principle of evil which tempts our species so often to tyrannize for mere wantonness of power."

The garden occupied by Sir James Macintosh, while he resided at Torala, near the town of Bombay, is also described by an eye witness as a little paradise, but for its reptile inhabitants. "Snakes, from the enormous rock-snake, who first breaks the bones of his prey by coiling around it, and then swallows it whole, to the smallest of the venomous tribe, glide about in every direction. There the cobra capello, whose bite is in almost every instance mortal, lifts his graceful folds, and spreads his large many-colored crests; here, too, lurks the small bright-specked cobra manilla, whose fangs convey instant death."

We shall here give a short account of some remarkable water snakes, belonging to the genus *Hydrus*. Soon after the opening of the bar in the month of October, 1815, reports prevailed at Madras that a great shoal of sea-snakes had entered the river, and that many natives while crossing had been bitten, and had in consequence died. A reward was offered for each of these animals caught, on the condition of its being carried to the superintendent of police. Pandauls were erected opposite to the two principal fords, and skilful natives, under the superintendence of Dr. M'Kenzie, (to whom we are indebted for the information,) were provided with eau-de-luce and other remedies, and directed to afford immediate aid to those persons who might be unfortunately bitten. Many were bitten accordingly, and all of them exhibited the symptoms usually consequent upon the action of a powerful animal poison; but none of them died. We shall briefly state a couple of cases:—A native woman, in crossing near the land custom-house, was seen while stepping out of the water, to shake something off which had grasped her foot, and which to several spectators appeared to be a water-snake. The woman, after advancing a few paces from the river, fell down, and was carried to the pandaul in a state of apparent insensibility. On examining her feet two small but distinct wounds were perceived on the ankle of her right leg; her skin was cold, her face livid, her breathing laborious, and her pulse scarcely perceptible. A ligature was immediately applied above the wound, which had been previously enlarged with a lancet, and a piece of the carbonate of ammonia, well moistened with pure nitric acid, applied, and 30 drops of the eau-de-luce were administered nearly at the same time in a glass of water. In five minutes more a similar dose was poured down her throat, which seemed rather to increase the spasm at the chest, but the pulse became distinct at the wrist, though feeble. A third dose was repeated in three minutes more, on which she uttered a scream, and began to breath more freely. About ten minutes had now elapsed since she had been carried to the pandaul, and in about three minutes more a teaspoonful of the eau-de-luce was given, which almost immediately produced violent nausea, and profuse perspiration. When a little salt was put into her mouth she declared it was not salt, but sugar; and this the natives deemed an infallible sign of still-continued danger. She was soon, however, entirely relieved, and merely complained for three or four days of a numbness in the limb above the wound.

Another case was that of a lascar, who was bitten by a snake when about the middle of the river. He advanced a few paces after quitting the bank, and then fell down in violent convulsions. When brought in his breathing was laborious, his skin cold and clammy, his countenance livid, and his pulse feeble at the wrist, but distinct at the temples. A quantity of froth and foam was ejected from between his closed teeth. He, too, recovered after a similar treatment; but he complained for many days that he had no left leg.

A large healthy chicken was exposed to the bite of a hydrus major four feet long. It was bit in the foot, and in about ten minutes began to droop, and to show a slight convulsive flutter in both wings. In three minutes more it was convulsed; and at the end of seventeen minutes from the infliction of the wound, it suddenly dropped down dead.

Dr. Russel has figured and described 43 of the most common serpents of Hindostan; and he informs us that a quantity of warm Madeira taken internally, with an outward application of eau-de-luce, on the punctures, was generally successful in curing the bite of the most venomous species. He also states that the medicine called the Tanjore-pill is equally efficacious. Of the 43 serpents examined by Dr. Russel, he found only seven that were provided with poisonous organs; and on comparing the effects of the poison of five of the oriental species on brute animals, with those produced by the poison of the rattlesnake and the European viper, he remarked that they all produced morbid symptoms nearly similar, though they might differ in the degree of their deleterious power, and the rapidity of its operation.

The Indian remora (*Echeneis neucrates*) appears to occur in many different quarters of the world. According to Commerson, it is common about the coast of Mozambique, where it is used for the catching of turtles. A ring is fastened to the tail of the fish, and a long cord inserted through the ring. It is then carried to sea in a vessel of salt water; and as soon as the boatmen perceive a turtle asleep upon the surface, they endeavor to approach as close to it as possible, and then throwing the remora into the sea, they give it the proper length of cord. If it perceives the turtle, it immediately attaches itself to its breast, where it adheres so firmly as to enable the fishermen to draw the turtle within their reach. This species, according to Bloch, sometimes attains to the length of seven feet.

Many species of *Chætodon* inhabit the Indian seas. The only example of the genus which we shall here adduce is a fresh water species,—the rostrated chætodon (*Ch. Rostratus*). The length of this curious fish is about six inches. This extraordinary little creature is famed for the method by which it captures

its prey. When it perceives a flying insect either hovering over the water or quietly sunning its gauzy wings on the leaf of some aquatic plant, it shoots out a drop of water from its tubular mouth, so suddenly, and with such unerring aim, as to tumble the insect in a state of stupefaction on the surface of the stream.—"In shooting at a sitting insect," says Dr. Shaw, "it is commonly observed to approach within the distance of from six to four feet before it explodes the water. When kept in a state of confinement in a large vessel of water, it is said to afford high entertainment by its dexterity in this exercise, since, if a fly or other insect be fastened to the edge of the vessel, the fish immediately perceives it, and continues to shoot at it with such admirable skill as very rarely to miss the mark."

The *Orthopterous* order, which contains, among others, the locust and grasshopper groups, is the next in succession. The plague of locusts is known to India in like manner as to most of the warmer countries of the globe:

"Onward they come, a dark continuous cloud
Of congregated myriads numberless,
The rushing of whose wings is as the sound
Of a broad river headlong in its course
Plunged from a mountain summit, or the roar
Of a wild ocean in the autumn storm,
Shattering its billows on a shore of rocks."

We are told, indeed, that during the rainy season in India insects of all kinds are sometimes so numerous and so active in their operations, that it becomes necessary to remove the lights from the supper table. In regard to the Indian locusts a correspondent of Messrs. Kirby and Spence informed these authors that he was eye-witness to an immense army of locusts which ravaged the Mahratta country, and was supposed to come from Arabia. This column extended five hundred miles, and was so compact when on the wing that it darkened the sun like an eclipse; so that no shadow was cast upon the ground, and some lofty tombs, distant not more than two hundred yards from the observer, were rendered invisible. This was not the *Gryllus migratorius* of Linnæus, but a red species, and its peculiar color added to the horror of the scene; for, after having stripped the trees of their foliage, it congregated around the bare and desolate branches, producing a hue like blood. "And the sound of their wings was as the sound of chariots, and of many horses running to battle."

Lac is also the produce of an insect of the coccus kind, which is collected from various trees in India, where it is used in the fabrication of beads, rings, and other ornaments of female attire. When mixed with sand it forms grindstones; and added to lamp or ivory black, and previously dissolved in water with a little borax, it composes an ink, which, when dry, is said to be capable of resisting a considerable degree of damp or moisture. In this country, according to the different conditions in which it is imported, it is called stick-lac, seed-lac, lump-lac, or shell-lac. It is chiefly used in the formation of varnishes, japanned ware, and sealing-wax, although in later years it has been applied to a still more important purpose, as originally suggested by Dr. Roxburgh,—that of a substitute for cochineal in dying scarlet. The first preparations from it with this view were made in consequence of a hint from Dr. Bancroft, and large quantities of a substance termed *lac-lake*, consisting of the coloring matter of stick-lac, precipitated from an alkaline lixivium by alum, were manufactured at Calcutta, and sent to this country, where at first the consumption was so considerable that in the three years previous to 1810 the sales at the India-house equalled in point of coloring matter half a million of pounds weight of cochineal. "More recently, however, a new preparation of lac-color, under the name of *lac-die*, has been imported from India, which has been substituted for the lac-lake, and with such advantage that the East India Company are said to have saved in a few months £14,000 in the purchase of scarlet cloths dyed with this color and cochineal conjointly, and without any inferiority in the color obtained."

We shall reserve our remarks and extracts on the botany of this extensive and diversified country for our next number.

The Cause of Farmers, and the University in Tennessee; two Baccalaureate Addresses pronounced in 1829 *and* 1832, *on the Fourth and Seventh Anniversaries of the University of Nashville.* By PHILIP LINDSLEY, D. D., President.

It would seem, even in the utmost stretch of human comprehension, that there should be, if not an entire reversion, at least a revision in many of the concerns of both the moral and physical world. And were it not there is sufficient evidence to confirm us in the belief that the ultimate results will fully confirm the infinite wisdom of all antecedents, the aspect of mundane affairs would lead the mind to the gloomy and horrible conclusion, that an evil genius presided supreme. Among those things which are irreconcilable to the thoughts of finite minds, is the deeply rooted and very prevalent antipathy of those who till the soil towards an extensive cultivation of the mental powers. Why is it that the power of high mental culture to ameliorate the condition of mankind has been almost exclusively confined to those in professional pursuits, who are a very small minority, instead of being extended to that large portion of the population whose callings are so favorable and congenial to a salutary and happy control? Why is it that we, even we of this generation, have entailed upon us the ill effects of learning and science originating in the closet rather than in the field? Why is it that the farmers of this country, who are so favorably situated to alter, if not to reverse, the relative grades of intellectual culture, continue to persevere in giving to the few the supremacy in education, which, like the golden lever in the business affairs of mankind, exerts an all-controlling power? The answer to these questions is found rather in faith in Providence than in the ken of finite minds.

The Addresses before us advocate the cause of farmers—combat the prejudices of this class of our population towards collegiate institutions, and show the appropriateness and expediency of rendering them instrumental in their own relative advancement. On this subject Dr. Lindsley thus speaks:

None but enemies of the people will ever gravely maintain that a common school education, in the ordinary meaning of the phrase, is all they need. This would be virtually telling them to be hewers of wood and drawers of water under political task-masters for ever. Why is it that our lawyers rule the nation, and fill all our lucrative offices, from the presidency downwards? Simply and solely because they can do something more than read and write. If our mechanics and farmers would enter the lists with our lawyers, they must acquire the same degree of intellectual power and address.

I have been pleading the cause of farmers and mechanics for some ten or dozen years past. Because upon them, as enlightened, judicious, independent, patriotic citizens, depend the destinies of this republic. The question is, shall they lead or be led? Shall they arrest and put down the factious spirit of unprincipled ambition, or shall they tamely lend themselves as the instruments and the victims of its desperate and treasonable purposes? The crisis has arrived when the people must speak and act wisely, or their ability to speak and act, with decisive efficiency, will be lost for ever.

The lawyers are now our sole political guides and instructors. They engross the learning of the country; I mean all that learning which is brought to bear on government, legislation and public policy—for the physicians rarely intermeddle in these affairs; and the clergy ought forever to be excluded by law, if not by a high sense of duty. Our farmers and mechanics, therefore, who constitute the great body of the people, are governed by the lawyers. Now is it not in human nature, that in such a country as ours there should not grow up a sort of professional aristocracy, which in time may become irresistible? Wherever there is a privileged order, no matter how constituted—whether like the *patrician* of ancient, or the *ecclesiastic* of modern Rome—it will, if not duly checked and counterbalanced, in the long run, become overbearing and tyrannical. I look to the college for a reasonable supply of countervailing agents. I look to a well educated, independent yeomanry, as the sheet anchor of the republic. I look forward to the period when it will not be deemed anti-republican for the college graduate to follow the plough; nor a seven days' wonder for the laborer to be intellectual and to comprehend the constitution of his country.

I am not unfriendly to lawyers. I could say much in their praise, were I in the humor of pronouncing encomiums. In their proper sphere, they are useful and necessary. But that they should engross the legislative, judicial and executive functions of the government, is neither republican, nor safe, nor, upon any ground, defensible. There would be reason in the thing, if, like the farmers, they composed a large numerical majority of the population. But that a few thousand of any particular profession, class, or order, should rule over millions, is as anomalous, and as inconsistent with the genius of our popular institutions, as would be an hereditary aristocracy possessing the same exclusive privilege. The farmers have no alternative but to yield their necks to the yoke, or to open up for their sons a great high-way to the scientific halls of the university. Belonging, as I do, to their respectable fraternity by birth, by early association and by all the ties of kindred—the son of a laboring farmer, the brother of laboring farmers, and the father, it may be, of laboring farmers and mechanics—I cannot be indifferent to their welfare, even upon the most selfish considerations. But I feel conscious of a higher motive. I seek to elevate my country, by imparting to all her sons the noblest attributes of humanity. That we may be forever a nation of enlightened, generous, high-minded, self-governing freemen. The envy and the admiration of the world.

Our author's remarks, illustrative of the tendency of learned institutions to foster and support civil liberty, are supported by our ideas of intellectual culture, and by the part which these institutions have acted, when unfettered by superstition and restrictive law. Witness the Gymnasiums of Germany and the Polytechnic schools of France.

Wherever (says our author) the university has been suffered to flourish and expand, and to send forth its salutary streams among the people, there have been growing up both the capacity and the determination to resist all gross oppression. And *there*, too, a decided progress has been made in all the arts of peace, and especially in the science of government. In Spain, Portugal and Russia, a fool or a ruffian may be tolerated on the throne, because the university has been kept in bondage and the people in ignorance. But were a Nero seated on the throne of England to-morrow, he would not dare to violate a single law of the realm. He could no more enact the part of a Richard or a Henry, than the meanest subject could commit murder with impunity.

The history of those colonial pioneers in the

cause of learning, virtue and liberty, is pregnant with instruction to all men who entertain doubts or fears or prejudices in regard to the character, influence, and bearings of similar establishments. Within sight of the oldest, and still most celebrated university of our country, commenced the mighty contest which created a nation of freemen. And her gallant sons poured out their blood like water upon the battle field. They roused by their eloquence every patriotic energy of their countrymen, and were ever foremost to hazard and to sacrifice fortune and life for the general weal. Then was the golden opportunity for college-bred gentlemen to have secured for themselves stars and garters, and mitres and estates, by rallying round the royal standard, in support of legitimacy and aristocracy, of the priest and king; and to have placed their feet proudly upon the necks of the vulgar and illiterate. So base a sycophant, so traitorous a tory, so aspiring a *would be* lord, never disgraced a college catalogue. Not one proved recreant to the cause of popular rights and liberty. Whatever their calling or profession—lawyers, physicians, clergymen, merchants, farmers—all the sons of *Alma Mater*—were found in the ranks of hostility to Britain's claims and to Britain's legions.

Nor ought it ever to be forgotten that, throughout the original thirteen confederated colonies, afterwards states, the best educated and most enlightened individuals were decided Whigs;—and in their wisdom, intelligence, patriotism and integrity, the people reposed unlimited confidence. And they were not deceived. These were the men who directed the Revolutionary conflict: and these too were the men who formed the Constitution, under which we now live in peace, prosperity and happiness, unparalleled in the history of our world.

The following paragraphs accord so well with our sentiments, that we can do no more than give them a cordial recommendation:

But our farmers ought, beyond all question, to be liberally educated; that is, they ought to have the best education that is attainable. I do not say that *every* farmer ought to go to college, or to become a proficient in Greek and Latin. I speak of them as a class; and by a liberal education, I mean such a course of intellectual discipline as will fit them to sustain the rank which they ought to hold in this republic. They are by right the sovereigns of the land, because they constitute an overwhelming majority. Why do they not then, in fact, rule the land? Because, and only because, they are too ignorant. And thus they sink into comparative insignificance: and suffer themselves to be used as the mere instruments of creating their own masters, who care as little for their real welfare as if they were born to be beasts of burden. Were it possible, I would visit every farmer in Tennessee, who is not already awake, and endeavor to arouse him from his fatal lethargy, by every consideration which can render life and liberty desirable: and urge him to reclaim his abandoned rights and his lost dignity, by giving to his sons that measure of instruction which will qualify them to assert and to maintain their just superiority in the councils of the state and of the nation, like men proudly conscious of their intellectual as well as physical power.

The same general remarks apply to mechanics and to all the laboring classes, in proportion to their numbers. An education, even of the highest order, may be as valuable to them as to others. In our free country, a farmer or mechanic, with equal talents and intelligence, would be more likely to become a popular favorite, than either a lawyer, or the well-bred heir of an opulent patrician family. Suppose a farmer could speak as well, write as well, appear as well versed in history, geography, statistics, jurisprudence, politics, and other matters of general and local interest, as the lawyer—would he not stand a better chance of being elevated to the highest, most honorable, and most lucrative offices?

The grand heresy on the subject of education seems to have arisen from the usage which obtained at an early period in modern European society, and which many centuries have sanctioned and confirmed—namely: that a learned or liberal education was and is deemed important only for a liberal profession, or for gentlemen of wealth and leisure. Hence the church, the bar, and the medical art, have nearly monopolized the learning of the world. Our people reason and act in accordance with the same absurd and aristocratic system. The *cui bono* is upon every tongue. "What *good*," it is asked, "will college learning do my son? He is to be a farmer, a mechanic, a merchant." Now, I would answer such a question, in the first place, directly thus: "A college education, or the best, most thorough and most extensive education that can be acquired, will be of immense benefit to your son, simply as a farmer, mechanic, merchant, manufacturer, sailor or soldier." And I would patiently endeavor to show him how, and in what respects; but I will not attempt to illustrate such truisms at present. But, in the second place, I would reply to my plain friend's interrogatory thus: "Educate your son in the best manner possible, because you expect him to be a MAN, and not a *horse* or an *ox*. You cannot tell what good he may achieve, or what important offices he may discharge in his day. For aught you know, he may, if you do your duty by him, become the President of the United States. At any rate, he has reason and understanding, which ought to be cultivated for their own sake. Should he eventually live in the most humble retirement, and subsist by the hardest manual labor, still he may enjoy an occasional intellectual feast of the purest and most exhilarating kind." If all our laboring fellow-citizens could relish books and should have access to them, what a boundless field of innocent recreation and profitable entertainment would not be always at hand and within their reach? What a flood of cheering light and happiness would not be shed upon the dark path, and poured into the bitter cup, of millions of rational immortal beings, who, at present, rank but little above the brute in their pursuits, habits and enjoyments?

In reference to elementary education, a parent ought never to inquire what his child is to be—whether a farmer or a lawyer—but should educate him in the best manner practicable, and endeavor to inspire him with sentiments of virtue and independence, which would preserve him from the vulgar pride of being ashamed to earn his living by honest industry. Besides, learning is itself a treasure—an estate—of which no adverse fortune can ever deprive its possessor. It will accompany, and console, and support him to the world's end, and to the close of life.

Our farmers and laboring classes have as much leisure for miscellaneous reading and study, as the professional—or even as the wealthy or fashionable *idlers*, who do nothing. Paradoxical as this may seem, it is notoriously the fact. Even in England, where this leisure is not half so great as the poorest of our people habitually enjoy, it has been discovered that the most ignorant and debased and hard-worked manufacturing operatives have abundant time for much intellectual cultivation.

It would seem as though mankind, on the most important subjects, express themselves by sudden impulses of feeling, rather than by the results of patient and labored investigations. We often see this to be the case in religion, politics, and other topics of momentous interest. Not many years ago, the argument that Agricultural Associations were beneficial to the rich only had so much weight as to array public opinion, in this state, against them. The same species of logic is combatted in the following extracts. After speaking of the beneficial results from the quite common practice in New-England of giving sons a liberal education, and of the usefulness and eminence to which collegiately educated youths of poor and industrious parents arrive, he says:

How absurd, then, to depreciate and denounce colleges as being hostile to the poor or beneficial only to the rich. The truth is, the rich always build, endow, and sustain them, while the comparatively poor reap the principal advantage. Were our opulent citizens desirous to erect themselves into a distinct and superior *order*—a moneyed aristocracy—they could not devise a surer method of compassing so foul a design, than by discouraging and frowning upon every scheme for the dissemination of knowledge.—Let them put down or prevent the establishment and growth of the higher seminaries—of colleges and universities—and they might then monopolize all the intelligence and power of the state; because they could easily educate their own sons abroad at any expense, and thus fit them for the learned professions, and for all the higher offices of the republic. Will the people tamely submit to so gross a usurpation, and suffer themselves to be cozened out of their dearest birthright and most valuable privileges?

How *could* the poor, let me ask, in any possible way, be injured or oppressed? They are not expected to advance a farthing of the funds. What they have not, they cannot give. The state could not extort from them, in the shape of taxes, what they do not possess. The poor, then, and all their noisy pretended friends, may hold their peace, and quiet their patriotic alarms on this subject. They may rest assured that their *empty* purse will not be made the *lighter* by any literary scheme that may be projected. Colleges have always been reared by the rich; and, no doubt, for the selfish purpose of serving their own interests—while universal experience demonstrates that the poor, after all, reap the benefits in a tenfold proportion.

Distinguished men, who have, without a collegiate education, arrived, by their talents and great acquisitions, to high stations and offices, are cited against literary institutions. This is another instance of common erroneous reasoning—claiming variations to a general rule as exceptions, and advancing them in support of an opposite theory! The principal object to be obtained in colleges and universities is a mental discipline leading to habits of study throughout life. If some individuals have such an ardent desire for knowledge, and have such a control over their minds as to employ all their leisure in close study, without the privileges of a college, it only shows that they have been indebted to some circumstances that have given their minds this bias towards improvement.

Now, (says Dr. Lindsley,) besides the extreme modesty of recording their own names upon the same tablets with Franklin and Washington, they might be reminded that those truly great men never uttered such a boast, and never decried such institutions. Franklin was the father of the University of Pennsylvania, and Washington endowed a college in his native state. No man, therefore, will ever give any very convincing evidence that he resembles Franklin or Washington, by a supercilious affectation of contempt for colleges, or by a narrow, invidious, systematic, malignant hostility towards them.

We wish that clergymen who occupy literary stations held similar sentiments to those advanced by Dr. Lindsley. Could our legislative bodies, in particular, be brought to feel the force of his reasoning, and would act in accordance on the subject, a new and happy era, in reference to education, would commence in this country. The useful arts of life would be increased in number, and add vastly to the comforts, wealth, and refinement of the community.

ORIGINAL COMMUNICATIONS.

The Productions of Double Flowers and New Varieties of Fruit. By L. T. To the Editor of the New-York Farmer and American Gardener's Magazine.

Sir,—Since I first began to turn my attention to the delightful study of the vegetable kingdom, I have been deeply interested in that part which relates to the productions of new varieties of fruit and flowers by the distribution of the farina. I have read the experiments of Mr. Knight, President of the London Horticultural Society, with no ordinary pleasure, and with a high opinion of the great benefits that will result from his labors, not only in respect to the productions of new and valuable varieties of fruit, but to the moral tendency of an increasing taste for vegetable physiology among all classes of the community.

I truly hope the proposition made by B. in your last number, in relation to a Pomological Society, will be cordially acceded to by a sufficient number of enlightened and zealous gentlemen, for I consider that the science of vegetable physiology would be greatly promoted by such an association. It is to be hoped that the contemplated society will not confine their labors merely to the investigation of the valuable properties of fruit, but include the science on which the production of new and desirable varieties depend.

While on this subject allow me to recommend to the notice of your readers the following interesting and appropriate article. It is taken from Professor Silliman's Journal of Science, and written by a young German physician of Charleston, S. C., and entitled, Observations on depriving Flowers of their Anthers, to produce Double Flowers, by E. T. Leitner. Dr. Leitner has in contemplation a tour through Florida, to investigate the Natural History of that portion of our extended country.

Some years ago, Dr. Messer, of Cabo, (kingdom of Wuertemberg,) published a small book, entitled "Art of raising double Gillyflowers, Neustadt at the Orla, 1828;" in which he shows how to deprive unfolded flowers of their anthers to prevent fructification, and that seeds from such mutilated flowers produce double flowers. Dr. Messer gave notice of it to the Horticultural Society of Berlin, Prussia, but with the remark, that he was less fortunate in experiments made on flowers in his garden than on those which he had in pots, perhaps because they were less distant from other flowers. The Horticultural Society encouraged him to continue his experiments, which he performed with great success. At the same time Prof. Bauer, Prof. Schuebler, Mr. C. Orthman, (inspector of the College garden,) and myself, made experiments in Tubingen, on the same subject; and the results are now concentrated as follows: We could not find much difference between flowers in pots and the same flowers in gardens. Seeds produced by prevented fructification always showed in one hundred plants sixty or seventy with double flowers, while one hundred plants, when in the same ground, in a natural way, produce no more than twenty or thirty. Even the seeds of the former produced flowers larger and more full, than in the natural way. In some of the flowers, the number of the petals was multiplied from fifty to fifty-five, when in single flowers there were no more than four. No stamen, or rudiment of the germ, was discovered in the centre of the flower. The following are the most interesting remarks on the subject.

1. To succeed in these experiments, you must cut out the anthers from the closed flowers, when they are almost formed, but have not yet spread out the pollen. The Gillyflower (Cheiranthus annuus) succeeded in the best manner, just when the petals are about 3½–4‴ (lineæ Parisiensis) long, already a little colored, but still closed and folded; the petals must very cautiously be opened with a pincette, and the anthers taken out.

2. If you cut off the anthers when the pollen is already spread out in some measure, then large and perfect pods are produced, but the single flowers are mingled with double ones.

3. If you take them before the anthers are formed, and the petals still colorless, or only whitish green, and about 1–1½‴ (Paris measure) in length, standing out of the calyx, then no seed at all is produced, and the germ after some time drops off sterile. This observation proves that the fructification must be according to the former method certain, though imperfect.

4. If you observe the further growth of the pods of such deprived flowers, you will remark that they grow less regular than natural ones; they thicken and swell up, sometimes on the upper more than on the under part; they are generally shorter than usual, and vary very much in size on the same plant.

5. In the state of maturity, you find less seeds in pods of mutilated flowers than in those not so. We find the seeds sometimes only attached to one side, the other side of the dissepiment being empty; single pods contained from five to seven seeds, when natural ones had from forty-six to fifty.

6. The single seeds are sometimes smaller, sometimes more or less curved, and imperfect: the weight of one thousand ordinary seeds of the Gillyflower, in a dry state, attached for ten months to the dissepiment, was in the month of July 26 grains. One seed had a weight of about .026 gr. or near to $\frac{1}{38}$ gr. The same number of seeds from double flowers was 22 to 24 grains; single seed, $\frac{1}{44}$ to $\frac{1}{48}$ gr.

7. We observe sometimes, in natural pods of the Cheiranthus annuus, curved and imperfect seeds, which produced double flowers also.

8. Simple Gillyflowers, from seeds of artificial deprived flowers, displayed sometimes an irregular shaped corolla; instead of four, only three petals; and instead of six stamens, only three on one side of the corolla.

9. The color remained, as well in single as in double ones.

10. The odor seems to be augmented in double flowers.

11. Manure has some effect on the multiplying of flowers; however, not so many flowers are then produced, in the Cheiranthus annuus; the whole plant rather becomes more strong and luxuriant. Often the manure of pigeons, and powdered bones, has the effect of imparting white spots to colored flowers.

12. On Cheiranthus incanus, (Stockflower,) it has the same effect, and in that plant the seeds seem to differ too in proportion, so that the weight of one thousand ordinary seeds amounted to 33 grains, and one seed about .033, or near $\frac{1}{30}$ gr.; the same number of seeds of double flowers 30 to 33 grains, or single seeds $\frac{1}{36}$ to $\frac{1}{33}$ gr.

These experiments show, that this formation of double flowers, produced by depriving the flowers of their anthers, agrees well with the theory of sexuality. The usual fructification is only disturbed, but not immediately destroyed; the imperfect seed is still formed; the plants raised from them display, instead of the organs of sexuality, a multitude of petals, where the ability of production is manifested.

The experiment I made with Nicotiana Langsdorfii and N. paniculata, can be connected with it. I deprived the former of the stamens, and fixed the pollen with a quill on the stigma of the latter, which produced, by sowing the seed the next year, quite a different plant—a medium between both. Dr. Gaertner made an experiment of this kind with Nicotiana glutinosa and N. suaveolens, which produced a variety with a multitude of beautiful red blossoms. It is to be wished that similar experiments may be made in this country, with different plants and in different places.

Importance of Good Public Roads. By E. A. To the Editor of the New-York Farmer and American Gardener's Magazine.

To an Agricultural and Commercial Community, good permanent roads and other means of communication, to facilitate transportation and travel, are of the most vital importance.

It has frequently been to me a source of astonishment and regret to find so much apathy manifested on this most important point, and by those too whose interests are so intimately connected therewith.

Exclusive of turnpike corporations (many of which are chartered or privileged but to tax the public for travelling on a bad road,) our public highways are generally kept in repair by an assessment on the inhabitants in labor, in proportion to the property held, superintended by an overseer. But either thro' carelessness, inadvertence, or some other cause not known, many districts remain from year to year in a most wretched state for travel, either not worked at all, or in so slight and unskilful a manner as to be of very little benefit for any length of time. This inattention to roads may often be attributed to injudicious selections of overseers, but it is more generally a strange apathy on the subject manifested by most of the inhabitants of the district, and those whose interest would seem to demand a far different course; for, strange as it may appear, it is not the less true that very many farmers who make a great use of the roads in their vicinity, for the transportation of manure from the landings, and the produce of their farms to a market, appear to manifest very little regard to the condition of those roads provided they can but get along—not taking into calculation the greater ease and facility with which they might perform the same business on a good smooth hard road. But such is the fatuity of some respecting future benefits, that they view all labor as lost which they are called on to perform in the repairing of the public highways. If however they would make a valuation of the difference in the wear and tear of their carriages on a good smooth road, and the greater ease with which their teams might perform a greater amount of business, they would not but perceive the error under which they labor. And I verily believe that every person is more than doubly repaid who uses roads at all, for every day's work judiciously applied in repairing them.

In the district of country in which I reside, by nature rugged, (on the spine of Long Island,) there are abundant materials for making good permanent roads, even on the M'Adam plan; but the labor of construction is so considerable, that it is not likely soon to be adopted to any considerable extent on our common roads. The great thoroughfares, however, through the Island, ought to be constructed on the M'Adam principle, in which case we might enjoy the benefit of a good road at all seasons of the year—an advantage we do not possess in the present state of those roads with our ever-varying climate in the wet season.

E. A.

North Hempstead, Feb. 4, 1833.

Rise and Progress of Agriculture in Scotland.

By Senex. For the New-York Farmer.

Mr. Editor,—Having lately become a subscriber to the New-York Farmer and American Gardener's Magazine, I feel much pleased with the work, both in its plan and execution. I flatter myself every farmer and gardener, and every lover of Agriculture and Horticulture in the state, may feel an interest in it, and give you all the aid in their power to carry it on. You are entitled to their assistance, and I sincerely hope you may receive it liberally. Under this impression, being willing to contribute my mite, I send you the following short statement regarding the Rise and Progress of Improved Husbandry in Scotland, (my native country,) under the idea that it may be found interesting of itself, and as affording the American farmer an opportunity of comparing his situation with that of his brethren in Europe.

For many ages prior to the beginning of the eighteenth century, the state of agriculture in the north of Europe was in the most abject condition; the art itself, as well as its poor, ignorant, and oppressed professors, was held in very low estimation—the barbarous influence of the Feudal System blasted agriculture and every useful art. The first germs of improvement took root in Holland and Flanders; commerce, manufactures, agriculture, and industry of every description, encouraged and protected by a wise policy in the Dutch Republic and Belgian Provinces, in a short time spread prosperity and riches over these countries; population increased with unexampled celerity; cities and villages arose on every hand, and a market was created for every species of agricultural produce:—here it was that clover and other artificial grasses, turnips and other ameliorating crops, were first introduced into field culture, in rotation with grain. The plough and other farming utensils were here first improved, and new machines, such as the fanner and roller, invented—the value of manure properly appreciated—fine cattle bred, and husbandry carried on with a degree of system and perfection formerly unknown.

Good husbandry was for many years confined to Holland and Belgium, or the Netherlands. It was only about the beginning of the last century that clover and turnips were introduced into England—in the county of Norfolk first, and from thence, by very slow degrees, to the other English counties, in some of which their introduction is only of recent date.

Improved husbandry was introduced into Scotland at a still later period, and though its progress there was at first equally slow, it finally surpassed that of England, both in rapidity of progress and perfection of practice—the husbandry of Scotland being accounted at the present day superior to any part of the north of Europe, Holland and the Netherlands excepted—for it is allowed that these countries still continue to excel the rest of Europe in the practice of agriculture.

The remainder of this communication will be confined to Scotland, where I have been an eye witness to the progress of improved husbandry from nearly its commencement to the present day. I may premise, that the division of land in Great B... as well as Europe generally, is very differe... om that of America. The whole of the soil of Scotland and England is divided among a comparatively small number of proprietors. Some of the estates of the nobility and gentry comprehend whole parishes, others many farms, others only a few farms. Most of these proprietors live on their estates, and have a farming establishment about their manor-house, managed by a steward or overseer, but of course the great body of the farmers are tenants, paying rent and holding their farms on leases of limited duration. The Union of Scotland and England, or rather the time between the years 1715 and 1745, when the two last efforts were made in Scotland in favor of the royal family of Stuart, may be considered as the period of the first introduction of improved husbandry in the south of Scotland; this was accomplished by the exertions of a few spirited proprietors, whose memory will be long revered in that country—these had travelled in England and Flanders, and from thence introduced fallowing, clover and turnips, with improved utensils, on their own farms, and by most liberal assistance and encouragement, induced a few of their tenants to follow their example. From 1745 to the end of the American Revolutionary war, the new system had made a slow progress in a few of the southern counties, particularly in East-Lothian, among the tenants, and had advanced northward among the proprietors. Towards the end of this interval many of these made great exertions; they procured overseers, both from Norfolk and Lothian, to manage their own farms, and by giving very favorable leases, induced farmers and farmers' sons from the south to settle on their estates. They sent, at their own expense, some of their farmers' sons to England and Lothian, to be instructed in the best practices, and on their return gave them very favorable leases. In this period, also, the Press first came to the aid of Scottish agriculture. Several excellent Treatises on the art came out, particularly "The Gentleman Farmer," by Lord Raimes, which had a most beneficial effect in diffusing correct information, and raising a spirit of emulation which has not yet subsided. Improved farming became quite fashionable among the landholders, many of them embellished their estates with fine plantations of forest trees, and brought their house farms into good cultivation. Still, however, their example had wonderfully little effect on the great body of the tenantry, whose habits and practice, sanctioned and endeared to them by antiquity, were given up with the greatest reluctance. I may here state the condition and practice of the old Scottish tenantry at this period, namely, the close of the Revolutionary war. I was then sixteen years of age, and remember it as well as yesterday. The farm-houses were mean hovels, built of rough undressed stone and earth, without wooden floors or upper story; the out-houses were of the same kind, placed where chance seemed to direct, without regard to plan or regularity. The plough was a most clumsy and ponderous utensil, drawn by eight, ten, or twelve oxen on the large farms, and on the small, by the aid of cows and small horses; the work performed miserably bad, so as to require much spade work to make it fit for the seed. No carts were in use; the farm-yard manure was carried out in baskets of a particular construction, on the horses' backs, and the harvest brought home by a similar contrivance. One system of cropping prevailed all over Scotland for every kind of soil. I shall not take up your time to detail it; suffice it to say, that it consisted of perpetual scourging of the ground for grain crops as long as it would return the seed.

The end of the American war was the period destined to eradicate this system, and give an irresistible impulse to Scottish husbandry. The landholders finding the tenantry not to be moved by example or precept, resolved to force them out of the old path, and with this view, in granting new leases, introduced compulsory clauses binding them under severe penalties to fallow, sow grass seeds, cultivate turnips, and adopt a rotation of cropping suitable to the soil and circumstances of the farm. This was unwillingly gone into at first, but upon a fair trial was found so advantageous, that they became entirely reconciled to it. Compulsion became unnecessary—correct practice became more generally known and valued, and at the present day compulsory clauses are seldom inserted in leases, but only such restrictions regarding cropping as may appear necessary to guard the farm against waste or over-cropping towards the end of the lease.

Farming became more and more fashionable among the nobility and gentry—the king himself setting a good example to the nation. Among the expedients to stimulate and encourage the tenantry, Farming Societies were about this time got up in Scotland and England, who held out premiums for all sorts of improvements. These Societies still continue, and persevere in their patriotic labors. They consist of the nobility, country gentlemen, clergy, and most respectable of the tenants; and though their very liberal efforts have often come short of their, perhaps, too sanguine expectations, still there is no doubt their influence has been highly beneficial. These Societies, at first small and unconnected, have, in many instances, joined and formed one large County Society; and some of them comprehend several counties, by which they are enabled to act with more effect, and extend their use and influence.

Soon after this period the Board of Agriculture was instituted by the British Parliament, under whose orders fit persons were employed to draw up and report a state of the agriculture of every county in Britain. The publication of these Reports furnished for the public a matchless mass of agricultural and statistical information; this has been also arranged and condensed, by Sir John Sinclair, and given to the public in two separate works. At the same time "The Edinburgh Farmer's Magazine" made its appearance, (a work similar to your own,) through whose pages, whatever is most material in these reports, as well as in every other agricultural publication of the day, was quickly communicated to the farmers in general. This book is generally believed to have had more effect in the dissemination of sound agricultural principles and practice, and forwarding their adoption among the farmers, than all the efforts of the Farming Societies, liberal and persevering as they certainly have been. It was begun in 1801, and has been continued ever since; and such is considered its importance, that scarce any respectable farmer in

Scotland can now want it. Its circulation in England is also very great. While on this subject I may mention the establishment of a Professorship of Agriculture in the University of Edinburgh, by which an opportunity is afforded to all who choose to be instructed in the theory, as well as the practice, of agriculture.

These exertions and measures have undoubtedly contributed highly to the advancement and prosperity of agriculture in Britain, and have been aided by other very powerful auxiliaries. The first I shall mention is the introduction o lime as a manure. This most important article came into general use in Scotland soon after the period last mentioned, namely, the end of the American Revolutionary war, and soon became indispensable on every Scotch farm.—Without this noble assistant the best lands in Scotland could never have attained their present state of fertility and productiveness, and the poor and muirland soils must have remained in perpetual sterility. Used with proper judgment it is indeed valuable; there is not the least doubt that it has more than doubled the value of all the arable lands of Scotland.

Another highly important circumstance in favor of the farming interest of Great Britain is the successful establishment and progress of manufactures, many of which had their beginning, and the whole received an unprecedented impulse, near the above stated period, accompanied at the same time by a most successful, active and extended commerce. By these, the population of the country has been gradually and greatly increased, and thereby a ready market (the very life of farming) provided for every kind of agricultural produce. The depreciation of money and increase of the circulating medium may also be noticed as a circumstance favorable to the tenants; holding their farms on leases of nineteeen or twenty-one years duration, generally, with a fixed money or victual rent, they had all the advantage of the fall of money and rise in the price of produce, which had the effect, in fact, of lessening the value of the rent during the currency of the lease, while it increased the value of produce.

Under these favorable circumstances the annual rent of the arable lands of Scotland have been more than quadrupled within the last sixty years. The face and appearance of the country has been wonderfully changed to the better; and the condition and circumstances of the tenants vastly improved in spite of all the increased rents, and sometimes heavy taxes. Many of them have made genteel fortunes; all of them live better in every respect; all of them now have comfortable houses of mason work; many of them live in genteel mansions, with excellent steadings of farm offices, built after a regular plan, and quite complete: their respectability and standing in society is also much raised. Those who occupy large farms are generally well educated themselves, and often give their sons a liberal education. Farming capital is, probably, increased tenfold within the period last stated.

In surveying the above statement, the American farmer will naturally notice with interest the various measures and circumstances by which this agreeable state of things has been brought about. The various and persevering exertions of the landholders in the first place, and secondly, the progress of manufactures, commerce and population. And here I cannot avoid expressing my ardent wishes for the continued success of American manufactures and commerce, and my hopes, that such necessary protection may still be afforded them as to prevent their decay or destruction by foreign competition, supported, as it is, by foreign legislation, overwhelming capital, and low rate of labor. There cannot be the least doubt that the prosperity of agriculture is closely connected with that of manufactures and commerce at the present day, and has been so in every age.

The American farmer, in comparing his situation with that of the great body of his European brethren, must find himself on very enviable grounds—fully master of the soil, himself the landlord—without the anxiety and hazard attending the taking or renewing of a lease—without rent to pay—taxes light—his soil and climate superior, producing the most valuable kinds of grain in perfection, with fruit in great variety—his markets good, with every prospect of being steady. What better encouragement can the heart of man desire? Internal Improvements have ever been favorable to agriculture as well as commerce, and certainly we have no reason to complain for want of enterprise in our citizens on that head. Our manufactures and commerce are prosperous at present, and our population increasing at an unexampled rate; all these circumstances we have advantage of. I say therefore the present times are as favorable to farmers as they can reasonably expect or wish for. The character and standing in society of the American farmer is every way respectable; many of our members understand agriculture both in theory and practice, and their farm management would do credit to some of the best districts of Europe: at the same time it must be owned that a much larger proportion of us appear to manage our operations as if ignorant or regardless of principles or system.

There is no doubt that the diffusion of agricultural knowledge among us is needed. Good principles and good practice will be extremely advantageous to all of us. The science, if you please to call it so, is certainly progressive and susceptible of improvements and alterations periodically. Therefore nothing is more just than the old adage, that farmers are always to learn. And I know of no mode of communicating information to us so well adapted as a well conducted Magazine. Such a work puts the farmer in possession of the practices and opinions of men of his own profession in different districts of the country, gives him notice of every different improvement as it takes place—makes him acquainted with every new treatise connected with the art as published—informs him of the state of the crops in every part of the Union, as well as in foreign countries—of the present prices of produce, both at home and abroad, and the probability of their rise or fall—in a word, every thing that can be interesting or entertaining to the farmer, as well as the gardener, may be expected, from an able editor or conductor, in such a work, assisted and supported as he ought to be. Wishing every success to the Magazine, I beg leave to subscribe myself, your friend and well-wisher, SENEX.

January 15, 1833.

Agricultural Inquiries. By A GREEN MOUNTAIN FARMER. To the Editor of the New-York Farmer.

May I be permitted to make a few inquiries through your Farmer, as I am passionately fond of agriculture? The brief period since I retired from the South, and commenced farming, has not enabled me to acquire the requisite information. Some of your correspondents, especially the "Old Man," of Derby, Conn. with whom I believe I am acquainted, will, doubtless, be so kind as to give the information desired.

At what season should the seeds of the ruta baga be planted, and how much seed is required per acre?

What soil is the best adapted to this root, or how should it be prepared? Indeed, the entire management of the crop I am anxious to be informed of. Also, where the seed of the best quality may be had?

I have made inquiries respecting the "ruta baga," or Swedish turnip. I desire to be informed in the same particulars in relation to the "mangel wurtzel;" also, to which species a preference is given by your best farmers, both as to comparative quality and expense of rearing.

What species or kind of oats are considered preferable by your best farmers at the South? And what is the average yield per acre, say, in New-York or Connecticut? And what the average weight per bushel?

What species of potatoes are considered preferable by your farmers in the same States, and what the average yield? Of late our farmers begin to pay much attention to this crop—but I suspect that our quality may be much improved by the introduction of a new species. The ones generally grown here are the early whites, and the purple or blue. 250 or 300 bushels per acre, with but indifferent culture, are here considered a good crop.

The two last seasons I have grown carrots for my stock, believing them to be highly nutricious. But of late I have seen an article in some agricultural paper, (perhaps, the New-England Farmer,) which gives the blood-beet the preference. I shall feel highly obliged to any of your correspondents for their opinion on the relative merits of the two articles.

What is the average product of common meadows within, say, 75 miles from the seaboard, from New-York to Boston? I am particularly anxious upon this point, as I am of the opinion that we appropriate too much land, by far, to the culture of hay, and that it would be better policy to cultivate roots to a much greater extent for the feeding of stock.

Again, as the "Green Mountains" are, by your Southerners, conceived to be north of the limits prescribed by nature for any business except that of obtaining fur, I feel a little anxiety to be informed what the number of months are with your farmers during which they fodder their cattle, and if I discover that I am compelled to handle the pitchfork when they are planting or hoeing corn, I may be induced to break up for a more Southern latitude.

The spring with us was very wet and cold, and much of the corn planted rotted in the ground. The crop in this State is very light, say, half an average crop. Wheat, rye, oats, potatoes, &c. less than an average crop. Grain

is scarce and high. The summer was cold, and winter commenced early.

Yours, respectfully, S. R. Crane.

Directions for Forcing and Forwarding Vegetables. By T. Bridgeman. Continued from p. 43. To the Editor of the New-York Farmer.

Forcing and Forwarding Cucumbers.—Those who may be desirous of obtaining cucumbers at an early period may commence their operations of forcing eight or ten weeks before the fruit is required for use. It may be necessary to observe that the most dwarfish sorts are best suited for the purpose, such as the early frame, early cluster, and short prickly. Some choose the long green Southgate; and seed which is two or three years old is generally preferred, as it is not so apt to run to vines as new seed.

A hot-bed should be prepared in the very best manner, for the purpose of producing seedling plants. Some sow the seeds in the earth of such beds at once, but it is generally sown in pots or boxes of rich light mould, which are placed in the hot-bed. In either case, as soon as the plants have fully expanded their two seed leaves, they may be transplanted into pots; put three plants in each pot; when this is done, apply water warmed to the heat of the bed, and lay on the sashes, keeping them a little shaded, by throwing a mat over the glass, till the plants have taken root. When they are a month old, they will be fit to transplant into the fruiting bed. In preparing this bed great pains should be taken that the materials are all suited to the purpose. [see page 42.]—The substance of dung should be from three to four feet in depth, according to the season of the year, and the moulding should be done as soon as the bed is settled, and has a lively, regular tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of burning effect are discovered, by the mould turning of a whitish color, and caking, it will be fit to receive the plants. Raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the air of the bed, and kept shaded till they have taken root. The temperature should be kept up to 60°, and may rise to 80° without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well prepared dung must be applied all round the frame; begin by lining the back part first; cut away the old dung perpendicularly by the frame, and form a bank two feet broad, to the height of a foot, against the back of the frames; as it sinks add more; renew the linings around the remainder of the bed as it becomes necessary, and be careful to let off the steam and give air to the plants at all opportunities. Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon in the advanced season of hot sunny weather. Some use water impregnated with sheep or pigeons' dung.

As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, and a supply of good mould should be furnished to gather up as required, for earthing around the plants. When they have made one or two joints, stop them, by pruning off the top of the first runner bud; and afterwards continue through the season to stop them at every joint; this will strengthen the plants and promote their perfecting the fruit early.

The following artificial operation is recommended by Abercrombie, Phial, and other writers, as essential to the production of a full crop of cucumbers under glass. In plants more freely exposed to the open air, the impregnation is effected by nature. Those which some call false blossoms are the male flowers, and are useful in this operation.

"The cucumber," Abercrombie observes, "bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males; but they are placed in the vicinity of the females, and are absolutely necessary, by the dispersion of their farina, to impregnate the female blossom; the fruit of which will not otherwise swell to its full size, and the seeds will be abortive. The early plants under glass not having the full current of natural air, nor the assistance of bees and other winged insects to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification watch the plants daily; and as soon as the female flower and some male blossoms are fully expanded, proceed to set the fruit the same day, or next morning at farthest. Take off a male blossom, detaching it with part of the foot stalk. Hold this between the finger and thumb, pull away the flower leaf close to the stamen and antheræ or central part, which apply close to the stigma or bosom of the female flower, twirling it a little about, to discharge thereon some particles of the fertilizing powder. Proceed thus to set every fruit, as the flowers of both sorts open, while of a lively, full expansion; and generally perform it in the early part of the day, using a fresh male if possible for each impregnation, as the male are usually more abundant than the female blossoms. In consequence the young fruit will soon be observed to swell freely. Cucumbers attain the proper size for gathering in about fifteen, eighteen, or twenty days after the time of setting, and often in succession for two or three months or more, in the same beds, by good culture."

Forwarding Cucumbers under hand-glasses.—Those who may not like to go through the tedious process of forcing cucumbers in frames may have them in the garden several weeks sooner than the ordinary season, by raising a few plants in pots placed in a hot bed as before directed. These may be transplanted on a warm border, either in the natural ground or on hot-bed ridges. A hand-glass should be provided for each hill, which should be kept close down every night, and in cool days taking care to admit air when practicable. The plants may be hardened by degrees by taking off the glass in the heat of the day, and as the weather gets warm they may be left to nature.

Forwarding Lettuce.—As head lettuce cannot be raised to advantage in extreme warm weather, lovers of salad are reminded that they may procure good lettuce in any of the winter months by cultivating it in frames, either placed upon the natural ground or on moderate hot-beds of stable dung. Those who may wish for a regular supply through the winter should sow some of the seed of hardy Dutch about the middle of August. The plants from such sowing will be fit to transplant into frames early in October, or sooner, if on rich land; and will supply the table to the end of the year. In September, and early in October, the seeds of Silesia or other favorite sorts may be sown in a cold bed. From plants thus raised, a supply of lettuce may be procured for the table throughout the winter months, or until a plentiful supply can be obtained from early crops planted in the open borders. Nothing is more simple or easily accomplished than the management of lettuce beds in the winter; the outside of the frames being well protected, and the sashes at night and in stormy weather covered with mats, boards, straw, &c. nothing can hinder it from progressing in growth. Lettuce in general, for heading, should stand at least a foot apart; but they answer very well in frames, if the plants be placed at about half the distance, say from six to eight inches, according to the sorts.

Forwarding Melons under hand-glasses.—Although our citizens have an opportunity of procuring the melon, without artificial aid, as their continuance is short, it may not be amiss to remind the gardener that the directions before given for maturing cucumbers under glass will apply to melons, with very few exceptions; care, however, must be taken that they be kept apart from each other at the time of fruiting, as instances often occur of whole crops being entirely ruined by plants of the same genus being raised too near each other. Those who may wish to forward melons may prepare a hot-bed in March or April to raise plants in; the bed may be formed and the plants managed in precisely the same manner as is directed for cucumbers. If the ridging system be adopted, and a hand-glass applied to each hill, melons may be obtained one month earlier than the usual time. Gardeners raising melons for the supply of the city markets may gratify the public by pursuing the forwarding, if not the forcing system. Ridges may be prepared in the following manner:

In April or May, a trench may be dug in a warm border, about two feet deep and three wide, and of sufficient length for as many hand-glasses as are intended to be employed, allowing three feet for every hill. Some good heating materials should be laid in the pits, managed the same as a common hot-bed; to this must be added good rich mould to the depth of eight or ten inches, for the plants to grow in; as soon as the mould is warm the seedlings may be planted, three plants in each hill, after which the hand-glasses should be set on and shaded. After the plants have taken root and began to grow, the glasses should be raised in fine days, and propped up so as to admit fresh air, and as the warm weather progresses they may be taken off in the middle of fine days, so as to harden the plants gradually to the weather; and by the latter end of May they may be left to nature. Melons or cucumbers may be perpetuated from layers or cuttings of the early plants, if required.

Forwarding Peas in Hot-beds.—The best sorts of peas to force are the most dwarfish

The true early frame pea is often preferred, but Bishop's new early pea is very dwarfish and prolific, and therefore suitable for forcing.—Peas become more prolific and run less to vine by being transplanted, than when they are sown where they are to remain; the plants may be raised in a gentle hot bed, either in the earth of the bed, or in pots or boxes. Peas do not require excessive heat; the temperature must be progressive, beginning at about 50° for the nursery bed, and from that to 60 or 65° for fruiting. When the leaves of the plants are fully expanded they may be transplanted in rows from twelve to eighteen inches apart; observe, the earth in the fruiting bed should be from twelve to eighteen inches deep. As the peas progress in growth the earth should be stirred, and when six inches high, small sticks may be applied, so that the tendrils of the peas may easily take hold; and they should be moulded at the bottom to enable them to support themselves. When they appear in blossom, nip the top off: this greatly promotes the forming and filling of the pods; they will require to be regularly watered, and as the spring advances they may be exposed to the weather, taking care to shelter them in the event of a sudden change.

Forcing Potatoes in Hot-beds.—Those who may attempt to mature potatoes in frames will of course provide such of the earliest kinds as are not inclined to produce large tops; the Broughton dwarf, early mule, and the oak and the ash leaved, are of this description.—Some forward them in pots or boxes, and afterwards mature them in a hot bed; others plant them in the bed at once, in which case the bed should be moulded from fifteen to twenty inches deep, and the heating materials should be sufficient to keep up a moderate heat for two or three months. Perhaps the most convenient way to force potatoes in this climate is to provide pots for the purpose; plant one set in each pot in January, set them in a warm cellar till a bed can be prepared in February; in this set in the pots. While the tuberous roots are forming, and before they fill the pots, prepare the beds for maturing them, and then bury them in the mould with the balls of earth attached to them. The beds should be kept free from frost, and air should be given at every opportunity. The common round potatoe may be forwarded by laying them thick together in a slight hot bed in March, and when they are planted in the borders, a quantity of comb-makers' shavings may be deposited in each hill; this will greatly promote their growth.

Forwarding Carolina or Sweet Potatoes.—Sweet potatoes may be raised in the vicinity of New-York by means of a hot-bed; they should be planted whole, early in April, three or four inches deep, and about the same distance apart. In about a month they will throw up sprouts. When these are three inches above ground, part them off from the potatoe, which if suffered to remain will produce more sprouts for a successive planting; transplant them into rich light soil, in rows four feet apart, and the plants about a foot apart in the rows, or in hills four feet apart.—Keep them clear of weeds until the vines begin to cover the ground, and if the soil be sufficiently rich they will grow freely.

Forwarding Radishes, &c.—Radishes may be produced early in the spring by means of a moderate hot-bed. The earth in the frame should be a foot in depth, and air should be admitted every day after they are up, or they will incline more to top than roots. If they come up too thick, they should be thinned to between one and two inches apart. Give gentle waterings, as occasion requires, and keep them well covered in cold nights. Those who may have all their sashes engaged may raise Radishes without glass, by covering up constantly at night and during the day in cold weather. By using like care and precaution, turnips, carrots, onions, and other vegetables, such as salads, may be produced at an early period. The principal benefit derived from covering is in its breaking off the sudden rays of the sun after a frosty night. T. Bridgeman.

Bowery Road, February, 1833.

Agricultural Seminaries in the State of New-York. By the Editor.

Since the days of Bacon, intellectual culture has had an increased tendency to multiply and develope the sources of human enjoyment, and consequently to ameliorate the condition of mankind. The highest mental powers of the whole learned world are not expended in the mere sophisms of logic, nor in the pursuit of the imaginary philosopher's stone. Nothing that is not connected with the operations of nature itself, or with the elucidation of some principle tending to advance a useful or refined art, can now, at least for any considerable time and extent, enlist the thoughts and investigations of men. It would seem as though the philosophy of Bacon, in substituting the field of nature for the closet as the first and only appropriate place of study, had directed the thoughts and scientific investigations of mankind into the proper channel. Hence, in casting the eye over the civilized world, we see mental activity and research devoted to the extended application of the laws and principles of nature to those arts of life that increase and diversify the enjoyment of individuals and augment the wealth and power of nations. It would seem, too, in the present existing state of mind, that the peculiar and grand object of legislation was to promote this mental activity, to direct it to the local objects within its bounds, and to make the requisite provision, not only to demonstrate in the abstract the advantages and powers of science, but to increase the mental activity of the productive portion of the community, or, in other words, render all the benefits of science available by causing them to be put into general practice.

It is easy to see that a higher standard of scientific education in the agricultural portion of the community would be productive of numerous and great benefits. Comparatively, all the wealth, power, and greatness of the State of New-York arise from its agricultural productiveness. Let this portion of the population become roused to mental energy and research, and the physical resources will be increased in a ratio to supply all the wants of a population rapidly increasing, to one half of that of the United States. We apprehend no contradiction, when we assert that an enlightened legislation, in the endowment and support for the last twenty years of agricultural seminaries, would have now added half a million to our present population, and a much greater proportion to the wealth and enjoyments of the people.

It was our intention to say more on this important subject, generally, and especially in relation to the petition before the Legislature of this State, to aid in the establishment and endowment of an Agricultural Seminary connected with an Experimental Farm, but our limits will permit us only to refer to the sentiments of Dr. Lindsley, contained in another part of our paper.

[Since the above was written we have been politely favored with the following from one of the Aldermen of this city.—*Ed.*]

Dear Sir,—Since I had the pleasure of seeing you, I have called upon many of the members of the old Agricultural Society, and most of them express a willingness to co-operate in the forming of a new State Society, upon a more substantial and efficient basis than the former one. To this end, they unite with me in the belief that, to ensure the good in view, it will be necessary to have the time extended to ten or twenty years, and the funds set apart for the purpose; at least twenty thousand dollars to be divided among the various counties yearly, and ten thousand dollars to be distributed by a State Committee at the Five Fairs that may be established. Liberal premiums would insure competition, and without them I think, from former experience, little good would be effected, as our farmers require other stimula than pride to bring them to a Fair.

Besides farmers, other professions would be prompted to act, and especially merchants trading abroad, who, as formerly, would turn their attention to the importation of valuable breeds of animals from various countries, and thereby become serviceable to the state. To merchants, and those employed by them, we are indebted for the greater portion of short horns, Devonshires, Alderneys, Dutch, and other cattle and sheep, which were imported a few years since. Offer again the same inducement, by fair premiums, and these classes of men (merchants and sailors) would be again brought into action, and much probably for the common good.

The benefit to this county and those surrounding it, growing out of the former State Society, was incalculable, as by its fostering hand were introduced horses, cattle and sheep, as also swine, seeds, &c. &c. from every quarter of the globe, which have rendered our products in all these items far preferable to those of previous date.

In horses we took an immediate start, so much so that at this time the southern people come here for, not only horses for the saddle and draft, but for the blood horse, for the turf, found unquestionably superior to their own; and our northern blood stallions are now the most popular of any in the State of Virginia. In cattle, our farmers are falling off, as only here and there is one who preserves the pure blood of the various grades a few years since introduced, and this fact grows out of *want of system*, only to be kept up by *example* and frequent intercourse, which agricultural meetings are sure to bring about.

I trust something efficient may be done at Albany, and hoping to hear from you shortly after your arrival there, I remain yours, &c.

Harlaem, February 11, 1833.

Retrospective Criticisms on the First Series of the New-York Farmer. By the EDITOR. Vol. I. No. 2. [Continued from page 40.]

IMPROVEMENT OF PASTURES.—J. Buel, Esq. treats this subject in an interesting manner, under the following heads:—

1. Those in which the plough is altogether excluded, and which may be called *permanent pastures.*

2. Those which intervene in alternate husbandry, and which may be denominated *temporary.*

He considers the artificial means of improving the first class to be judicious selections of grass-seeds, manuring, draining, keeping the ground in order, and the extirpation of useless and injurious plants. Old pastures are highly valued in Great Britain—contain a greater variety of grasses, and yield a greater quantity of food than those recently laid down. The feed is believed to be more nutricious. Mr. B. recommends the planting of locust trees in pasture grounds—the top dressing to consist of road alluvian, swamp earth, plaster of paris, or a compost, in a state of incipient fermentation, of three parts of swamp earth, and one of fresh stable dung. By the aid of this compost he has trebled and quadrupled his manure. It should be applied in the autumn, or, we should suppose, early in the spring, if fermented previously. Scattering seeds, and scarifying or harrowing hide bound pasture grounds in the spring, are recommended; and also rolling them as soon as the ground has become sufficiently settled.

Under the second head he lays down the rule, that new pastures should as much as possible resemble old ones. To accomplish this, the seeds of all the esteemed varieties found in old pastures should be sown.

IMPROVEMENT OF SOILS.—On this subject Mr. William Wilson, of this city, gives a long and useful article, read before the New-York Horticultural Society. He speaks of the great advantages of mixing the soils in proper proportions. In noticing the benefits of unleached ashes, he states the fact that the dry sand land on which they were put produced very luxuriantly the Alsine media, chickweed, a plant which he had never before seen in this vicinity, and one which is peculiar to strong moist soils. Horn shavings put in the hills or drills are recommended for potatoes, at the rate of twenty-five bushels per acre.

ICE.—Mr. James Young, of Nottinghamshire, England, gives directions for filling ice-houses, which will preserve the ice two or three years. After having broken and pounded the ice almost into powder, lay the bottom and sides of the house with a layer of wheat straw three or four inches thick, lay thereon a layer of ice of about two feet, dissolve ten pounds of salt in ten gallons of boiling water, pour it on the ice with a watering pot, repeat the pouring of the salt water on every layer until the house is full, and cover the sides well with straw. Ice thus preserved will become solid, and will not dissolve in summer when exposed as soon as that housed in the common way.

PREPARING HEMP.—The Hon. J. Q. Adams, when minister to Russia in 1810, gave an account to Congress of the method of cultivating and preparing hemp in that country. A writer in the American Farmer gives the following directions:—

The soil should be deep, dry, clear, rich and mellow. Two bushels of seeds per acre on middling, and three on rich soil. About the first of August, when the stalks of the blossom or male hemp turn yellow, it is fit to cut. Cutting is recommended in preference to pulling. It will be rotted soon after cutting, in a pond or stream of clear water, in about five days. It should not touch the bottom. The after-management is similar to that of flax.

FOREIGN PLANTS.—In 1827, the Hon. Richard Rush, Secretary of the Treasury, issued under the directions of the President, circulars to all the American Consuls in foreign countries, recommending them to collect and transmit "forest trees useful for timber, fruit trees, grain, vegetables for the table, esculent roots, and plants of every description, whether used as food or for purposes connected with the useful arts." On Mr. Rush's application for information to Dr. Hosack, the New-York Horticultural Society, at the suggestion of the latter gentleman, appointed a committee, of which Mr. M. Floy was chairman, which reported in favor of the establishment of three or four botanic gardens in different parts of the Union, for preserving, acclimating, and testing those plants that might be transmitted. Happy for the country would it have been if this report had been acted upon by the General Government.—Dr. Perrine has been almost the only consul who has entered fully into the spirit of the recommendation. His exertions, we trust, will yet accomplish much.

CULTIVATION OF THE PEACH.—Mr. W. Wilson has no hesitation in giving his opinion of the failure in our peach orchards, to be owing to "the natural termination of the duration of the sorts so long propagated," rather than to "any extraordinary malignancy of disease." He recommends as an antidote to any serious injury, from the "yellows" in particular, the selection of new varieties and an improved culture. Mr. W. read his essay before the New-York Horticultural Society in 1824. We should be much pleased to learn from Mr. Wilson if his experience since that time corroborates the sentiments he then advanced.

EARLY PEAS.—Mr. William Curr sows the early double blossom frame pea in February and March. He prefers those for seed that are two or three years old, as they bear earlier and run to vines less. Those without bug-holes produce the most vigorous plants. The ground should be dry, the drills six inches deep and two wide at the bottom, in which should be put one inch of well-rotted dung, covered with two inches of soil. If the plants advance in frosty weather cover them by night with litter, or with two boards leaning against each other on their edges. Pinch off the leading shoot to make them more productive.

SOLANUM MONTANUM, OR WITHERINGIA MONTANA.—This species is the St. Lorenzo potatoe, tubers of which were transmitted by Dr. S. L. Mitchill to Professor Hooker of the University of Glasgow; they flowered in the possession of the last gentleman, and were figured and described in the Botanical Magazine. When boiled the tubers are said to be yellow and of a good flavor. Ruiz and Pavon say they are excellent for fattening swine.

VERMONT RICE, OR GROATS ARE OATS DRIED AND HULLED.—They are excellent for cakes, pudding and bread. When pulverized they are kept by druggists.

LARGE CURRANTS.—Thomas Williams, of Nottingham, says, "in the garden of the Rev. H. Bolton, I lately gathered several black currants which measured in girth, lengthwise, two inches and one-sixth, and in girth, round, two inches, and weighed forty-five grains each."

HORN PITHS.—J. Buel considers horn shavings and piths at 8 cents per bushel better than stable manure at 25 cents a two-horse cart load.

Vegetable Physiology—Lindley's Lectures. By B. For the New-York Farmer.

Professor LINDLEY, in his lectures which formed the subject of my late communication, lays it down as an axiom, that flowers and fruits "are only stunted branches, produced by accumulations of sap, or in fact, by partial disease or imperfection in the circulation." Whatever tends to retard the descending or elaborated sap, in the fruit tree, induces blossoms, and consequently fruit. This may be either ring-barking, ligatures, wounds, or bent or crooked branches. The best means within the reach of the gardener are found in judicious pruning. Those who select straight upright growing trees, or train them so by cutting off the horizontal branches, with a view of gratifying the sight, are often disappointed in their expectations of realizing early or abundant crops of fruit. The aliment which the roots take from the soil, and elaborate by the leaves, goes merely to increase the volume of wood. A crooked tree, although less thrifty, generally produces earlier, and is a more abundant bearer, than a straight one. Fruit trees growing wild, or which are neglected to be pruned, are much less productive than those which are cultivated, or judiciously pruned. This is particularly remarked of the grape, the currant and the gooseberry. The object of the cultivator should be to give the branches of his fruit trees a horizontal or oblique direction, which causes somewhat of a stricture at their intersection with the bole, and thus retards the free descent of the sap. This is one object of training trees to walls, that their branches may be preserved in a horizontal or oblique direction. And it is this law in the vegetable economy which has suggested a new mode of training, denominated *en quenouille* (distaff form), which is done by bending and tying the branches down in a drooping or inverted position. The Professor relates a case of a stone being successfully placed in the crotch of a tree, which, by pressing against the vessels of the descending sap induced fruitfulness. It is a good way to divest fruit trees, at a proper height, of their leading shoots, and to train them low and flat. Forest trees, on the contrary, where the object is ornament or timber, require to be trimmed with a straight clean bole, preserving, however, at least one-third of the height in top, lest you too much diminish the folinge—for leaves make roots, and roots make leaves.

This trait in the vegetable has a familiar analogy in the animal economy. The food that

is consumed by the cow is secreted either in flesh or milk. If she is a good milker, she seldom takes on much flesh, without extraordinary keep; and if she grows remarkably in flesh, she is but a bad milker. We cannot have an abundance of milk and meat from the cow, nor of wood and fruit from the tree. By the way, speaking of cows recalls to my mind a conclusion which is the result of some observation and reflection, viz: that taking into account the expense of keeping and the product, the little Dutch cows of New-York are superior to the improved breeds on the score of profit, for dairy purposes. They are probably of the true Holstein stock, introduced with the first Dutch settlers from the Faderland. B.

Suggestions relative to Gardeners' Work for March. By the EDITOR.

Although winter may linger and weary, like the prolonged stay of a dull prating visiter, yet this is the month of some activity. The gardener should recollect that the "powerful king of day" is about returning, bringing again under his calorific sway the northern half of his kingdom, and that preparations should be made for his august and most desirable presence.

> "Where'er he treads, heat gladdens every plain;
> Delight on tip-toe bears his lucid train,
> Sweet hope with conscious brow before him flies,
> Anticipating wealth from summer skies."

Potatoes.—This important and useful vegetable may be planted in boxes, pots or beds, in a warm cellar, and then forwarded in a hot-bed or transferred into a warm suitable soil in the open air. Towards the latter end of the month they may be planted in the open ground and covered with straw, leaves, or other litter.—Those that do not produce large tops are considered the best for early growth.

Peas.—The following are some of the most esteemed early varieties—Early Washington or May Pea, 2½ feet high; Early Double Blossomed Frame, 3 feet; Early Nimble Dick, 2½ feet; Early Frame, 2½ feet; Early Golden Hotspur, 3 feet; Early Charlton, 3 feet; Early Petersburgh, 2½ feet. The earliness of peas depends, in some measure, when the seed was gathered. If those that are first ripe are picked off for seed, they will ripen from five to fifteen days the sooner. See paragraph on peas in the article "Retrospective Criticisms," in the present number, page 74.

Parsnips may be sowed in some seasons as early as the middle of March.

Peppers.—The seeds of this plant may be put in a hot-bed this month.

Lettuce.—Sow the seeds of the tender kinds in a hot-bed: the more hardy in warm open borders.

Leeks.—On a bed of rich earth sow the seeds of this hardy plant in the latter part of the month.

Garden Burnet, Poterium sanguisorba.—Sow the seeds in drills, ten or twelve inches wide and one inch deep, in this month or April.

Purple Egg Plant, Solanum melongena.—Near the first of March sow in a hot-bed.

Cucumber.—Sow the seeds, which should be more than one year old, in boxes or pots that are to be put in a hot-bed. This being a monœcious plant, and not having the aid of the wind and insects to scatter the farina, the male flowers should be taken off and the farina applied to the stigma of the female flower.

Chives, Alium schœnoprasum.—This species of onion is propagated by off-sets from the roots.

Celery, Apium graveolens.—The seeds of White Solid are sown in a moderate hot-bed, the first weeks in March; or in a warm situation in the latter part of the month, near which time the seeds for a general crop are sown in a rich moist soil.

Among other useful vegetables that should be forwarded either in hot-beds or warm borders are carrots, cabbages, cauliflower plants under hand glasses, beets, spinnage, tomatos, and turnips. Transplant hardy lettuce, and dress asparagus and artichoke beds.

Rhubarb, Rheum rhaponticum.—This valuable plant for tarts is obtained from seeds sown in March, or from off-sets. The plant should be covered by a barrel or box, and heating manure put over the barrel. Very early in the spring the leaves of a rooted plant will be sufficiently large for use.

Seeds.—Many kinds of plants designed for seed should be brought forward as early as possible.

Cabbage Stumps should be taken up and put in favorable situations for producing greens.

Coverings may be removed about the end of this month, from semi-hardy flowering plants. Spring weather, however, should be well set in before many of them are uncovered.

Transplanting.—Fruit and forest plants may be set out at any time during this month, provided the ground be thoroughly commuted.

Flowers of the most hardy kinds, that are designed to flower early, may be sown the latter part of this month, in warm situations. Many that are tender may be sown in boxes or pots, placed in sitting-rooms, green-houses, or hot-beds, and in April or May put in the open ground, with the balls of earth adhering to them.

Temperature.—As the season advances, air should be more frequently given to all housed or protected plants, especially in warm, clear days.

Insects.—Plants protected with foliage often are invested with insects at this season. Tobacco smoke is generally used by florists to destroy them.

Propagating.—Plants may be propagated by cuttings, off-sets, and layers.

Remedy for various Diseases in Horses. By CARLO. To the Editor of the New-York Farmer.

SADDLE GALLS.—Take some white lead, moisten it with sweet or linseed oil, to the consistency of thick paint; apply this to all saddle galls and excoriations of any sort on horses, and it will heal their wounds directly. If much fever or inflammation should have taken place, a poultice may be applied over the white lead. The use of spirits of turpentine, the oil of spike, &c. I think is quite too irritating and painful, and is more apt to increase than to abate the inflammation. The white lead and poultices are much milder, and I think more adapted to heal such wounds. The same application will be found beneficial and effectual, in all cases of scratches; the part should be washed clean, and the white lead applied three or four times.

TUMORS AND GLANDS.—I agree with Mr. Hind, that most of the diseases called purulent tumors, diseases of the glands, such as strangles, glanders, farcy, grease, &c. are diseases of the blood and humors; but I disagree with him essentially and with most other farriers, as to the mode of treatment. In most of these diseases the bile is obstructed in its passage into the bowels, is diffused into the circulation, producing disorders of the glands, of the skin, and of the system generally. The first object then, it appears to me, is to lead the bile by its natural course into the bowels. This by promoting a regular digestion, and the natural order of the body, will soon sweeten the humors and remove and obviate most of the glandular and other disorders. The medicine directed by Mr. Hind, and most other farriers, appears to me little calculated to remove any of the difficulties, or effect a cure. Take half an ounce of gum gamboge, one ounce of aloes, and one ounce of salt-petre. Reduce to a fine powder, add flour and water till of the consistency of dough, divide it into eight or ten pills, give one pill night and morning about the size of a hen's egg, and I believe most of these disorders will be speedily removed. If much fever should attend the case, half a pint of ipecac. tea, given in a pail of water as his drink, may be of use to abate the fever. After the fever is entirely abated, half a pint or a pint of tea, made of oak bark or log-wood, given two or three times a day, or a quarter of an ounce of iron rust, given once a day, in his feed, will operate to strengthen him.

In obstinate cases two drachms of calomel and two drachms of salts of ammonia may be added to the pills above directed.

BOTTS.—Much has been said and written upon the subject of botts in horses; the following treatment appears to me to be the safest and most effectual.

Take one pint of milk, sweeten it with honey, molasses, or sugar, and give it to the horse. After about an hour, give him one pint of beef or pork brine, or salt dissolved in cold water, and repeat after about three hours.—Three hours after give a brisk purge of aloes, and if no fever, give a quarter of an ounce of iron rust in his food daily for ten or twelve days. The brine will certainly destroy the botts and worms, as far as it comes in contact with them, and the iron rust will prevent their return speedily. When the stomach is in good order, and the digestion active and sound, there is little danger from botts or worms.

FOUNDERS.—Mr. Hind gives us a long disquisition on the subject of founders in horses. I believe his views are very erroneous on this subject, at least all my experience and observation tend to confirm me in the opinion that it is the effect of eating or drinking improperly, and not the effect of hard treatment and bad shoeing. In this disorder I think bleeding is the first object, the next is to purge freely. These will soon abate the fever, after which the iron in his food, the oak-bark or log-wood tea, may be given with advantage to strengthen him, but not while any fever remains. I think where

the fever is obstinate the following pills may be given with advantage. Take emetic tartar one drachm, aloes half an ounce, assafœtida half an ounce; reduce to a fine powder; add flour and water till it is of the consistency of dough; divide into eight pills or balls, and give one every day. This treatment will be found safe, and I believe effectual, in most cases. Whether they be owing to hard treatment, or eating and drinking improperly, it is calculated to remove the fever and to strengthen the animal. Yours, &c. Carlo.

August 22d, 1832.

Importance of the Apple—Directions for the Management of the Orchard. By E. H. D. For the New-York Farmer.

Mr. Editor,—During a residence of some few months in this country, your interesting journal has frequently fallen into my hands; and as I perceive that you occasionally devote a portion of it to the dissemination of agricultural information, I have determined, if it meets your approbation, to contribute the result of my observations through the medium of the same. I am a citizen of the world, and have had frequent opportunities of comparing the state of agriculture in different parts of it, but I have never met with a place so eminently adapted to farming purposes as Long-Island. I have no doubt the system pursued by your farmers is, in general, best adapted to their interests; for I have noticed, during my peregrinations, that the capabilities of a country are best known to the inhabitants,—that is to say, I believe that a man will soon find out from half a dozen different crops the one which is best adapted to his soil, and will produce the most money. But there is one crop which, under proper management, can be made more productive than any your farmers cultivate, and which, as my observation has extended, has received very little attention—I mean the apple. It would almost be questioning the good sense of your farmers, in this age of general intelligence, to ask them if they did not know that this country is the most favorable on the globe for the culture of this fruit; and yet it really appears they know nothing of the matter. I am told that the celebrated Newtown pippin originated on Long-Island, and I know it is thought to combine more good qualities than any apple ever cultivated; many of these trees are annually imported into Europe, but none of them produce fruit equal to that from under the genial influence of your sun; the fruit itself is imported in considerable quantities, and it is no uncommon thing to see placards of "Newtown pippins" posted in the confectioners' windows as you pass through the streets of London; it sells at a very high price, frequently as high as six or eight cents for a single apple. With a knowledge of these facts, the cultivation of this admirable fruit should become an object of primary importance.

Now, it has been satisfactorily proved that, with proper care in trimming and manuring, together with a judicious selection of the stocks (a matter of all importance) six or at most eight years are time enough for trees to attain sufficient maturity to produce in three years as much as will pay all the expenses attendant upon their culture; that is to say, by the time they are eleven years old they will have paid for themselves: after this period they are rapidly becoming more productive, and require less attention as they increase in size, providing they have been properly trimmed every year, and manured at least every other year, till they begin to produce plentifully. By this time they will have become sufficiently established to draw their nourishment from the surrounding soil, and the manure bestowed upon the undergrowth. But your farmers tell me their orchards will not grow so fast; they say it requires twenty years for them to attain a full bearing state. This is true, and I will tell you the reason: they have been so long accustomed to consider them unprofitable, that what little attention they bestow (if perchance they should think them worth *any*) is given unwillingly, and with no idea of reimbursement.—The consequence of this is that the farmer, instead of assigning a suitable time and attention to his orchards with as much care as the rest of his farm, takes some odd moment, whether suitable or otherwise, gives them a superficial trimming or rather mangling, and thus leaves them, without any protection from the weather, which immediately commences its depredations upon the tree, and in a few years it is either completely destroyed, or becomes so diseased by the rot and canker, (both produced by the hacking system,) as to become a mere incumbrance, so that the Indian corn or potatoes, which might grow where it stands, would be worth ten times as much as its fruit. The great importance of applying some kind of dressing to trees after trimming appears to be almost entirely overlooked. What would be thought of a surgeon who should amputate a limb, and leave the bleeding stump exposed without any protection from injury, or any application to prevent the atmospheric influence upon the grievous wound he had inflicted.

Now, it is almost as preposterous to suppose the one would, under such circumstances, do as well as the other. In either case, no reasonable man will doubt the utility of some protection, in order to allow the healing process to go on uninterruptedly. With regard to the nature of the application, it is of little consequence what it is composed of, provided it is not of an acrid character. I have found, by experience, that a composition of equal parts of fresh cow-dung and common clay answers the purpose admirably. It forms a most tenacious plaster, and resists the influence of the sun and rain, which is the only object in view; it has this advantage over most others, it costs nothing, and can always be had. I have tried most of the applications recommended in books and papers—Forsyth's among the rest; they are all good, provided they will stand the weather. None of their component parts are received into the circulating juices of the tree; the only object in applying them is to prevent the pernicious influence of the sun and rain, together with those drying winds which cause the extremities of the limbs to crack open and afford admission to moisture; whilst in consequence of the exposure to the sun, the sap which exudes, and is intended by nature to heal the wound, evaporates, and leaves the tree without any means of effecting a cure. This evil is also produced by suffering two grafts to grow upon the same stock; even if there should be two separate branches and a handsome bifurcation which it would grieve you to destroy, nevertheless, you should either cut off one (the most horizontal one of course,) and graft the other, or if the stock will admit of it, cut and graft below both. This has frequently been told, and it is surprising it is not always practised. Turn your eye to the next orchard, and if you do not see one example of this pernicious practice, take my word for it, the man knew how to graft his trees. The philosophy of the thing is as plain as a pike-staff: if you leave both grafts, you impose upon good nature: you literally want two trees to grow where nature meant there should be but one, which one will prove a handsomer, more durable, and fruitful tree (aye, and a larger one too, if size is your object) than if you had left both. For the same reason that I recommend removing one graft, I would urge the importance of beginning to trim early. Begin as soon as the graft expands. If one bud should show a disposition to outgrow the others, rub all off but that one—it will grow the faster; you will lose nothing by it, as it will, nine times out of ten, exhaust the others so completely as to become the leading shoot, and will throw out lateral branches enough to form a handsome head without their assistance.

The graft should always be secured by tying a long stick round the stock, suffering it to project two feet above the graft to which it should be tied as fast as it grows. This rubbing off the buds is the first year's trimming; the next you can select the most promising shoots, and those which spread handsomely, cutting off the others with a sharp knife—every shoot you cut off affords additional nourishment to those which remain—an immense deal of labor is thus saved by *beginning to trim early*; it is much easier to cut off a limb with a penknife than an axe—besides this, you can see much better which it is proper to remove; you can make your tree spread beautifully; and thus, what would after six or seven years of neglect require a week to perform, may be done before breakfast, and become a pleasing employment in the one case—a task in the other. You should take care to prevent the access of the rain to the cleft which is made for the graft, as it would prove very injurious. In order to do this with little trouble, when you set your grafts, instead of the ordinary daubing with clay, use a composition of equal parts of wax and tallow, this will keep out the weather, and will not melt in the heat of summer. I have known it to remain upon the tree four years as good as when first applied; it is much more convenient than mud, and will be found an excellent preparation—the addition of a little rosin will make it more tenacious—that of ochre, as lately recommended, is certainly of no kind of use. If the bark of your trees appears unthrifty or infested with insects, apply soft soap, the alkali kills the insects and causes the bark to assume an uncommonly vigorous appearance. I shall enumerate a few more errors which cannot fail to strike the most unobservant beholder—planting too near, grafting too low, and suffering the grass to grow around the roots of young trees. By planting too near you deprive your trees of free access to the sun, this spoils the fruit as well

as the crop which grows, or rather tries to grow, beneath them. It makes little difference to a man who has a hundred acres of land whether his orchard occupies four, six, or eight acres; indeed, if trees are planted 60 feet apart—and I would never have them nearer—it is doubtful if they would make any perceptible difference in the crop; if this be true, where is the necessity of planting them 20 feet apart, thereby spoiling trees, crop and all; it is certainly the best policy to plant six acres with the same number of trees that are commonly planted upon four. In the next place, graft them ten feet high, so that your ploughman can drive under without knocking his hat off; the advantages and disadvantages attending this practice are the same as those in planting too near. Suffering the grass to grow round the roots of young trees is an evil of prominent magnitude, and I will venture to say causes the destruction of more young orchards than all the others together. Those who pretend to any solicitude about their orchards, say that the ploughing and manuring for the undergrowth is all that is requisite for the trees, but even if this would, under ordinary circumstances be sufficient, they forget that they are usually grafted so low that the plough cannot get near them. There is nothing like actual demonstration and comparison. Let any man select half a dozen trees in his orchard, give them a wheelbarrow load of manure, and then fall to and dig it in honestly and fairly, and compare the produce with six of the others, there is no doubt he would be pleased with the result. But I have trespassed long enough on the patience of you, Mr. Editor, as well as your readers, and will only add one good old maxim that I used to read in my youthful days, "whatever is worth doing at all, is worth doing well, and it is impossible to do any thing well without attention."

Part of the above remarks were published several years ago in one of your neighboring publications, and I now communicate them for your interesting Magazine. E. H. D.

Suggestions relative to Farmers' Work for March. By the Editor.

The more one contemplates the duties of the subject of study and investigation that are peculiar or appropriate to the calling of a farmer, the more extended and varied they appear. The whole book of nature lies before him whose operations are connected with and dependent on those of the physical world. He is invited to observe, assay by experiment, and reflect, in order to deduce general principles, which constitute true knowledge and render one person more intelligent than another. A habit of combining and classifying facts should be acquired by every one, particularly by farmers. There is scarcely any one principle or law in nature but that is of various application, pervading almost the whole of the physical world. Thus, gravitation, the principle on which an apple falls to the ground, sustains in operation the whole universe and all its parts. The imponderable substance called heat or caloric, with which the farmer has been acquainted all his days, is the great agent which changes, diversifies and beautifies the whole face of nature, and all that exist and move. A knowledge of four substances, carbon, oxygen, hydrogen, and nitrogen, introduce us to an acquaintance with the composition of all the varied substances of animal and vegetable origin, and with that of the sea and the air. How simple is nature! How inviting!! What encouragement is given to reflect on all we see, hear, smell, and feel!!!

First Effects of Caloric.—It is a fact that some individual varieties and species of the vegetable and animal kingdoms are more sensible to the influence of heat than others. It is desirable that farmers should observe and record these effects, with a view not only of having a knowledge of the facts themselves, but of deducing some general principle. What portion of practical farmers know which kinds of fruit trees enlarge their buds at a moderate warmth, and which the most rapidly, after they do begin to swell? At what time, and what breeds, do domestic animals first begin to change their coats? Thousands of similar questions could be asked, all connected with some general principle.

Feeding Live Stock.—Hay, stalks, and straw grow drier and harder, and consequently, more difficult to be masticated. The effects of this should be guarded against by giving an additional quantity of succulent food. It is against sound policy to permit live stock to decline at this season of the year, particularly horses, oxen and cows. If it is a fact that ruminating or the chewing of the cud is merely a provision to supply a deficiency of mastication, and not absolutely requisite for obtaining the full nutrition of the food, this very circumstance would seem to imply that the fodder of these animals should be so prepared that it could be digested without so much effort. Do cattle ruminate on dry fodder more than on grass?

Fattening Cattle.—Our readers will recollect that it was asserted in the last number of the Farmer, on the authority of a practical, intelligent farmer, that cattle would fatten well on raw potatoes and good English hay. Will some of our readers try the experiment?

Meadows.—Cattle and horses should be kept from the mowing meadows during the thawing weather of this month. Old meadows should receive a top dressing of well prepared compost or liquid manure.

Roads.—One of the subjects which claim the attention of every farmer is that of good roads. The advantages of them are not only greater facilities in transporting produce to market, decrease in the labor of horses, and in the wear of wagons, but an enhancement of property. The farmer should not only set the example of devoting his own means and time to their improvement, but endeavor to excite among his neighbors a spirit for further information relative to their improvement in general, and to the most suitable materials. We would inquire if chalk and other lime stone are considered better than any other materials?

Forest Trees.—Every farmer would do well to consider if some of his ground could not be profitably occupied with forest trees. If so, let him procure seeds to sow in a bed, or on the ground where they are designed to be located.

Silk.—We hope no one who has the least portion of ground will neglect to procure a few seeds of the White Mulberry, or a few plants. By thus doing he may, if not greatly benefit himself, make provision or excite a spirit that will furnish sustenance to thousands.

Ploughing.—Should the frost have left the ground, some farmers will begin to make preparations to turn the furrow. Before commencing they should call to mind the general principles of ploughing. We will mention some of them. The plough should be so regulated that when merely supported it would cut a little deeper and a little wider than is desired. To turn a handsome furrow, let it be nine inches wide and six deep, or in this proportion, which is varied for some purposes. Besides these, the line of traction, the angle of the mould board, and other points, are to be studied. Ploughing is considered the most healthful exercise performed on a farm. Almost every muscle and limb are brought into action, as well as the voice and the eye.

Calves.—Unless there is a coring or caking in the cow's udder, the calf should be taken away as soon as it has drawn off the beastings or first milk. If intended for the butcher, it should be put in a clean dry place, and led to the cow twice a day, at regular hours. The stomach is not as likely to be surcharged with the first, which is the thinnest of the milk, as with the last. Lumps of soft chalk, carb. of lime, if licked by the calf, will prevent acidity in the stomach.

Eggs for Setting.—Many farmers are very inattentive about small matters. Hence they are not careful to have the eggs for setting as fresh as possible, and of regular shape and size—the nests in a clean place, and made of clean short straw. If the straw is long and coarse, the temperature of the eggs cannot be kept so uniform.

Rollers.—Not one farmer in a hundred has one of these simple and important implements. There is no doubt that the additional quantity of seed that would germinate, and the increased certainty of germination, besides other advantages, would compensate for all the labor and expense in a tenfold degree. One of the first duties before the commencement of spring operations should be the making of one or more good rollers. It should be generally five or six feet long, and fifteen to thirty inches in diameter. Were rollers more generally used, the last line of the following verse would not be so proverbially true:

> The farmer's life displays in ev'ry part
> A moral lesson to the sensual heart.
> Though in the lap of plenty, thoughtful still,
> He looks beyond the present good or ill;
> Nor estimates alone one blessing's worth,
> From changeful seasons or capricious earth:
> But views the future with the present hours,
> And looks for failures, as he looks for show'rs.

The Pleasures of a Garden.—We would refer our readers to No. III of Hints to Farmers, on page 78, for an evidence of the happy effects of giving attention to gardening. The writer of that article is now in the enjoyment of comfortable competency, or rather of great affluence, filling an enviable sphere of diffusing far and wide, both by precept and practice, a taste for the rural sciences. Succeeding ages will hold him in fond remembrance, and bless his name. What humble mechanic can read the article referred to, and not have his breast throb with delight in anticipation of the time when he shall have his little garden!

Hints and Suggestions to Farmers, No. II. By B. To the Editor of the New-York Farmer and American Gardener's Magazine.

Society is made up of different classes, each possessing an identity of habits and interests distinct, yet not incompatible, with each other; and all contributing, when properly regulated, to make up a harmonious whole. Yet it is essential to the preservation of this harmony, that each, while it claims and maintains it own, should respect the rights and interests of the others. Of these classes the agricultural far exceeds in number the aggregate of all the rest. This consequently wields the giant power, and is amenable to posterity for its discreet exercise. History does not record an instance of the political power of a state being so emphatically in the hands of its agricultural population as it is in this country; nor does it afford us an example of an agricultural population so well qualified, by its intelligence and tenure of property, to protect and preserve the liberties entrusted to its charge. The fee of nearly all the lands on the old continent belongs to the privileged orders, or to the mercantile and professional classes;* who, there, also wield the political power. The cultivators—the farmers—are consequently, in a measure, dependents of the higher orders. Here the reverse is happily the case: our cultivators are the lords of the soil, and the depositories of political power. The spectacle which our country exhibits is one of momentous concern to the interests of humanity; and the eyes of the world are fixed with intense interest upon the novel experiment we are making in civil government. Under the high responsibilities which these considerations present, it is wise to look ahead; and scrupulously to guard against every innovation which may impair the purity of the government, or poison the foundations of its power.

The dangers most to be apprehended are likely either to grow out of the wealth and prodigality incident to our prosperity—to arise from the encroachments of ambition—or to result from the want of intelligence and vigilance in the people. The suitable precautions against these dangers are, first, an unyielding determination to preserve simplicity and economy in the administration of the government; 2d, a fair representation in our councils, and at all times of the great agricultural interest; and 3d, the more general diffusion of knowledge among this class, to qualify them to fulfil the high trusts committed to their charge.

In no class are the moral and social duties of life more strongly enforced by example than in the agricultural. Their frugal habits, unremitting industry, and unassuming pretensions —their attachments to their avocations and their homes, and the experience of the past,—all forbid the apprehension of danger from their use or abuse of power. But we must discredit the unerring testimony of history, ere we can award a like exculpation to all the other employments of society. Commercial and professional wealth, and the extravagancy and profligacy which they are apt to generate, have a strong tendency to impair the purity of our democratic habits and institutions. No exclusively commercial state has ever long withstood their corroding influence. Even England, whose wealth, commerce and arts are so often held up for our admiration, presents rather a beacon than an example for our imitation. She exhibits a melancholy picture of gorgeous misery—of wasteful extravagance and pinching want. One-seventh of her population are paupers; and the labors of four-fifths of the residue go to support the remaining fraction in luxurious idleness. It is to the intelligence and firmness of the farmers that we are to look for a counterbalance to this baneful influence among ourselves. Nor should we lose sight of the maxim which teaches that it is easier to prevent than to cure an evil—easier to extinguish the lamp than to overcome the fire, after it has enveloped our dwelling in flames. B.

* There are but 20,000 landholders in England, setting aside the clergy and corporations, and, I believe, 16,000,000 inhabitants.

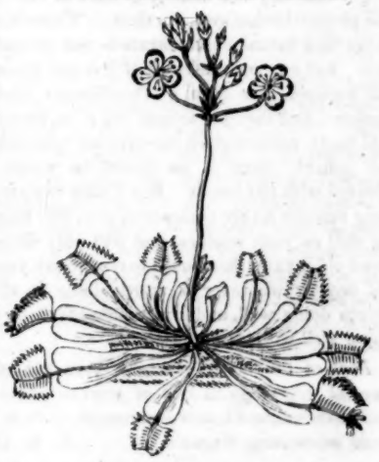
No. III.

The GARDEN is at once a source of profit, of substantial comfort, and of high intellectual gratification. Its fruits and its vegetables constitute the most grateful delicacies of our tables. Its flowers exhibit the exquisite pencilings of nature, calculated to gratify our senses, and to awaken the finer feelings of our nature. Its employments elevate the mind, reveal to it new sources of delight, and give health and vigor to the body. Its charms are alike calculated to temper the passions of youth, and to solace the infirmities of age. In fine, its pleasures afford one of the best illustrations we can possess, of the happiness of our first parents in their primeval abode. So apt am I to couple in my mind the culture of the garden with whatever is commendable in life, that I never, in travelling from home, see a neatly cultivated spot of this kind without intuitively imputing to its cultivator the active exercise of the social and relative virtues.

Half an acre of well cultivated garden will go farther towards subsisting a farmer's family than perhaps any three acres upon his farm, with the further advantage that while its products serve to gratify a diversity of tastes, they materially contribute to secure the blessings of health. Its labors may be managed by those who are too young or too old to share in the heavier toils of the field, by the female inmates of the family and the occasional aid of the workmen, without impeding the operations on the farm. My first essays at gardening were made during a period of comparative indigence and of active mechanical employment, which left me little but the usual hours of rest to devote to my garden. My rural labor did not infringe upon my ordinary business; and yet I managed to raise, with a trifling expense, all the garden productions necessary for my family. My zeal for improvement in this new business attracted the attention of that excellent philanthropist, the late Chancellor LIVINGSTON, who encouraged my efforts, by presenting me trees and scions of new fruits which he had recently brought from France. I budded and grafted, and though my first efforts were bungling, yet I nevertheless succeeded, with the occasional purchase of plants from the nurseries, in establishing in my grounds an excellent assortment of garden and orchard fruit. Thirty years' experience has fully satisfied me that a garden is not only profitable, but that it affords comforts and pleasures which wealth cannot purchase. The passion for rural culture has increased with my years; and I look forward to its employments, should my life be mercifully spared, as the best conservator of health, and the prolific source of future enjoyments.

In many parts of Europe the garden is not only a common appendage of the farm, but even of the humble cottage; and while these little improvements effect a great economy of labor in furnishing human subsistence, their floral decorations excite peculiar interest and admiration in the traveller, and are the theme of high commendation. In Wirtemberg, Baden, and some other of the German states, this branch of labor has particularly engaged the attention of the governments, and forms a branch of education in the primary schools. A knowledge of gardening is made an indispensable qualification in teachers of schools, who are required to instruct their pupils, in the hours of vacation, in a garden which is attached to every district school. B.

December 19, 1832.



Dionæa Muscipula, Venus' Fly Trap. By Q. Z. For the New-York Farmer.

This singular plant is considered one of the most remarkable and curious productions of the vegetable world. It belongs to the class Decandria, order Monogynia of Linnæus. The leaves are radial, lying upon the ground, and consisting of two parts. The lower, which is strictly speaking the leaf, is long, cordate, or heart shape, and is terminated by a single conservative appendage, which forms the upper half. This part consists of two lobes, the margins of which are terminated by ciliate divisions, like the teeth of a rat-trap, to which this singular anomaly is thought to bear a close resemblance, both in its appearance and its manner of operation. These lobes, particularly in dry weather, possess in a remarkable degree the vegetable irritability which has long been a source of wonder among naturalists, and which is very distinct in the well known sensitive plant and some others. If a fly or any other insect happens to alight upon one of these lobes his fate is almost certain. It closes immediately—the teeth lock themselves together and the poor insect is a prisoner. The greater the struggling the firmer the clasp, and it is either crushed or starved to death; when, the irritation having ceased, the lobe expands it-

self as before. Irritation with any substance, as a straw, stick, &c. produces the same effect.

It is a native of the swamps and marshes of Georgia and the Carolinas, and bears a profusion of beautiful white flowers in July and August, on stems five or six inches in height.

Q. Z.

Newburgh, January, 1833.

Advantages of keeping Debit and Credit Accounts. By SARATOGA COUNTY. To the Editor of the New-York Farmer.

SIR,—Your valuable publication has often recommended to farmers the practice of keeping accounts of the expenses and incomes of particular fields, as well as of the whole farm. I agree with you, that if our farmers would adopt the practice, and send you the results, not only the individuals themselves would be benefitted, but important service would be rendered to the public, by the tendency such communications would have to improve agriculture and to convey correct information on the real profits of farming. It is my intention to commence with the opening of spring, by requiring one of my sons to keep a regular set of books, in which all the outgoes and incomes of my farm and particular fields shall be recorded. I shall obtain a double object—ascertain my income, and afford a school of practice for my young book-keeper.

It is becoming quite common in our best female schools to make the pupils acquainted with book-keeping. I very much approve of the introduction of this study into seminaries for young ladies. If regular accounts were kept of the transactions in the household affairs there would be an increased attention to economy, and many, very many families would be kept from loss of property and from want.

As a specimen of farming accounts, I send you the following, from the Genesee Farmer:

DEBIT.

4 days ploughing, at $2,	$8 00
2 do. harrowing, at $2,	4 00
½ do. marking out, at 62½ cents,	0 31
7 do. planting, at 62½ cents,	4 37½
3 do. ploughing corn and potatoes, at $1 25,	3 75
15 do. hoeing do. at 62½ cents,	9 37½
5 bushels plaster, put on the hill, at 37½ cents,	1 87½
12 days harvesting corn and potatoes, at 62½ cents,	7 50
Pulling beans, drawing in, threshing and cleaning up,	3 32
Gathering pumpkins,	1 50
2 days drawing in corn, at $2 62½,	5 25
20 do. husking, at 62½ cents,	12 50
8 do. threshing and cleaning up, at 62½ cents,	5 00
1 bushel seed corn,	1 00
1 do. do. beans,	1 00
5 do. do. potatoes, at 31 cents,	1 55
Interest of $250, 5 acres at $50, at 7 per cent.,	17 50
	$87 80½

CREDIT.

200 bushels corn, at 62½ cents,	$125 00
76 do. potatoes, at 25 cents,	19 00
15 do. white beans, at 87½ cts.	13 12½
5 loads pumpkins, at $1,	5 00
Corn stalks,	15 00
	$177 12½
	87 80½
Total profit,	$89 32

Which is equal to the interest of $250 per acre.

The ground on which I raised the above mentioned crop, was carefully ploughed, and *very thoroughly harrowed.* The corn was planted with care, and hoed as well as it could be, and when my crop was taken off there was scarcely a weed in the whole field. The crows rendered me rather more assistance about hoeing than was desirable, which was the cause of my having so many beans, having planted them where my corn was missing.

The above is at your service. I am, very respectfully, &c. W. P. W.

Milton, January 10, 1833.

MISCELLANEOUS SELECTIONS.

[*From the London Mechanics' Magazine.*]

ERICSSON'S STEAM ENGINE AND WATER-MILL.—Perhaps the most interesting problem in mechanical science is how to simplify the steam engine, so that its bulk and weight, which are at present somewhat enormous, may be reduced within more convenient limits without any corresponding loss of power. Owing to a variety of causes, all well ascertained by long practice, a reciprocating engine cannot be made to work to advantage at more than a moderate rate of speed; it becomes therefore necessary to expose the piston to a great force, (for that force multiplied by the speed constitutes the power,) and, as a necessary consequence, all the parts that have to communicate this great force, as well as the frame work that carries those various moving parts, must be made strong in proportion. Hence it follows as a general rule, that the bulk and weight of any engine of a given power, worked by steam of given force, must depend on the speed of the piston, that is, the speed of that surface which the steam is made to propel. This truth forms the basis of the construction of the very remarkable engine which we have now to bring under the notice of our readers.

In the patent which Mr. Ericsson has taken out for this invention, he designates it as "an improved engine for communicating power for mechanical purposes;" and this generality was, perhaps, necessary, since, though it promises to be of most importance in connection with steam, it may be worked by any other gaseous or fluid power, as air, water, &c. The specification describes it more particularly as consisting of a "circular chamber, in which a cone is made to revolve on a shaft or axis by means of leaves or wings, alternately exposed to the pressure of steam; these wings or leaves being made to work through slits or openings of a circular plane, which revolves obliquely to, and is thereby kept in contact with, the side of the cone." But when the reader has read this description of the engine, we are afraid he will not be much the wiser for it; indeed, we never before met with an engine of which it was so difficult to convey, *in words*, a clear and distinct notion, and which was at the same time so little complex in its construction. We shall, therefore, be obliged to depend more than usual on the assistance of our engraver, to make the following description plain to our readers.

Fig. 1 represents a longitudinal section of the engine, the circular chamber being supposed to be cut through the centre line. A A is a circular chamber made in two parts, joined at *a a*, and fixed to a frame B B; this frame also supports the axis or main shaft C, to which is fixed the cone D. E E are two wings or leaves fixed to the cone; and *e* is a metallic segment, fitted into a groove made in the curved edge of the leaf, and pressed towards the chamber by springs in order to prevent the escape of steam. F is a circular plane, revolving on a shaft or pivot G, and supported by the main-shaft (as shown in fig. 4.) The oblique position of this circular plane, it will be seen, is so adjusted that its surface shall be parallel to, and in contact with, the side of the cone. H is a metallic ring fitted into a groove round the cone, and divided into segments, which are pressed towards the chamber by springs, to answer the purpose of packing. I is a metallic ring for the same purpose, fitted round the circular plane. K is a cylindrical brass for the pivot G to work against *e*, regulated by a key *k*. L is a conical brass guide, kept in its place by a set-screw *l*. M is a screw-pin for giving oil to the pivot. N N are conical brasses for the main-shaft to work in, and kept in their places by set-screws *n n*. *o o* are screw-bolts for securing the engine frame. P is a pinion or small wheel, for the purpose of communicating the power of the engine to machinery which may require a different speed. V is one of the slits or openings, in the obliquely revolving circular plane, through which the leaves work; this slit is of equal length with the leaf, and widening outwards from the surface of the plane, to accommodate the change of the angular position of the leaf, which takes place during each revolution. *v v* are metallic rods, kept tight against the leaf by springs, to prevent the escape of steam. WWW are thin flat arms for supporting the circular plane.

Fig. 2 represents the plan or top view of the engine, showing the exterior of the circular chamber, the frame work, main shaft, pinion, &c. (It may be as well here to state, that similar letters are used to denote similar parts in all the figures.) Q is the pipe through which the steam enters the engine, and R the pipe through which it escapes.

Fig. 3 is an end view or cross section of the engine, taken through the dotted line marked in fig. 2. The steam passes from the pipe Q into the circular chamber through an opening S, cut through its side; this opening is of a triangular shape, and made as wide at the top as the circular plane is there distant from the base of the cone, and gradually tapering off downwards. T is the opening through which the steam escapes, and in every respect similar in construction. The dotted line U shows where the cone and the circular plane come in contact. *e e* are the metallic segments already described.

Fig. 4 is a detached view of the cone in the circular plane, representing a section through their centres. It will only be necessary to observe, that *d* is a collar on the main shaft, by which the cone is fixed thereto; that *c* is a socket-ball, working in the socket *f* of the circular plane; and that the dotted lines E E show the precise shape of the leaves or wings fixed to the cone.

Having thus described the nature and construction of Mr. Ericsson's engine, we shall now proceed to explain the manner in which it is set to work. Steam being admitted into the pipe Q (see fig. 3) it passes through the opening S into the circular chamber, and being there prevented from passing the line U, where the cone and plane come in contact, it presses against the upper leaf, which, together with the cone, then revolves in the direction of the dotted arrow. Now, as soon as the said leaf gets below the top of the opening T, the steam that has been acting escapes through that opening into the pipe R, and thence into the atmosphere or into a condenser. The opposite leaf then operates in a similar manner, and so on as long as steam is admitted.

Many as have been the engines contrived for the production of rotary motion, we recollect none in which that result has been obtained by such a perfect harmony of operation among the different parts. Not only the general action of this engine, but the action of every part of it is rotary. The consequence is that it is wholly free from those serious drawbacks which make the attainment of a very quick motion, by means of a reciprocating-engine, a matter of so much practical difficulty. A vast increase of power is obtained, while the bulk and weight of the materials employed for the purpose are reduced beyond all former example. We shall endeavor to make this clearer by a few calculations.

The engine represented by the drawings (made to 2½ inch scale) presents to the action of the steam 12 square inches within the leaf, and is in a vertical position; but that being the maximum of surface exposed, a mean must be taken, which by the assistance of fluxions will

be found to be ten square inches within a fraction.

By referring to the scale, it will be seen that the globular chamber of this engine is 13 inches in diameter. An engine of three times the size, that is, with a chamber of 39 inches in diameter, would, therefore, expose 90 square inches to the action of the steam; and the average distance performed by the leaf would be 7.35 feet for each revolution, and if the engine made 180 revolutions in the minute, 1,323 feet would be the distance passed in that time. If, now, steam of 45 lbs. pressure to the square inch were used, 4,050 lbs. would be the constant force in operation, which multiplied by 1,323 shows that 5,358,150 pounds would be raised 1 foot high per minute; and this sum divided by the established number, 33,000, gives for the general result 162 horses' power. Now, if we deduct one quarter for friction, &c. which, considering the harmonious action of the engine, is amply sufficient, the available power will be 120 horses!

That so great a power should be produced by a globular vessel of only three feet three inches diameter, is a result so extraordinary that the attention is naturally and anxiously drawn towards any probabilities by which it may be defeated. The probability of the action becoming affected by leakages first presses itself on our consideration. On this head it may suffice to observe, that as none of the packings require any other play than to be moved gradually against their respective surfaces as they wear away, all that is required to ensure tightness will be good workmanship. The next contingency which suggests itself is the ordinary one, of liability to derangement. On this score, however, there is but little to be feared, for the engine is of so few parts, and the mutual action and reaction of these parts is so simple and natural, that unless wantonly injured or obstructed, it can scarcely go wrong. We apprehend that the only real danger to be guarded against is the heat which may be generated by the rubbing parts, when the engine is put to its speed; between the bearings and gudgeons in particular, as they will have to withstand a great force. Experience can on this point be the only guide to a correct conclusion; but we incline to think, that as no inconvenience is found in cotton mills by giving shafts of a large size, and communicating great power, a velocity of 180 revolutions per minute, any deduction to be made on this account from the utility of the engine will be but trifling. As to the packing rings, the pressure on them will be but slight; indeed, their centrifugal force will be nearly sufficient to give them always an outword bias; the danger of their heating must therefore be extremely small.

It may not be amiss to observe, that the principle of the engine is such that the steam may be admitted from either side with equal effect. The motion can therefore be reversed, by merely reversing the inlets and outlets of the steam by means of a common slide valve or four-way cock—a feature of this engine, which, to say nothing of its speed, must render it particularly applicable to all locomotive purposes.

The branch of steam service, however, in which this engine is likely to be adopted with greatest benefit, is the marine. In steam vessels, lightness, compactness, simplicity, are all properties of the utmost importance; and doubly so, when they can be obtained, as in this instance, without any sacrifice whatever of power.

When water is employed to work this engine, the operation will be precisely the same as in the case of steam; with this exception, that the packing rings may be dispensed with. The exception, however, is of a nature which shows that, as a hydraulic engine it will work even better than as a steam engine; of this, however, more hereafter. At present, we trust we have said enough to satisfy our readers that the great space which we have devoted to this latest wonder of the mechanical world has been not unworthily occupied.

Fig. 1.

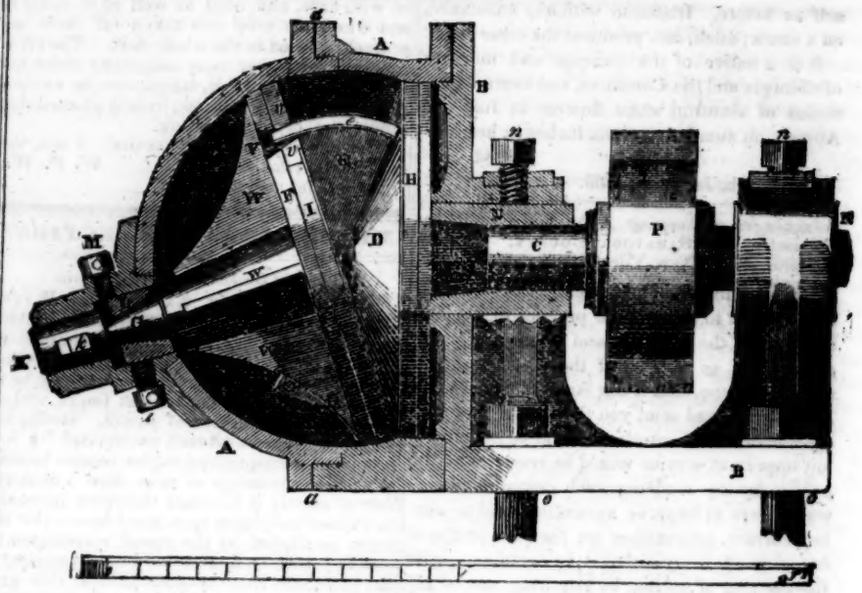


Fig. 2.

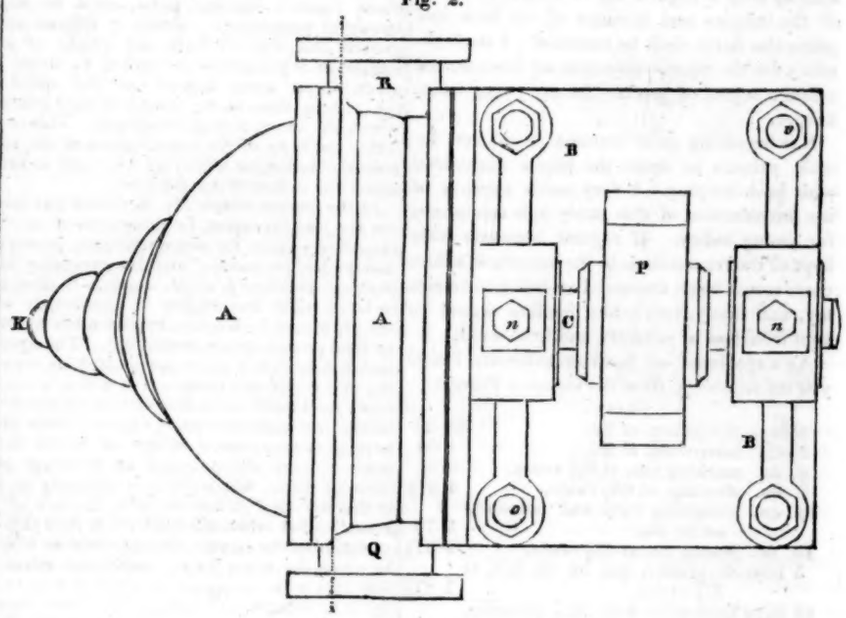


Fig. 3.

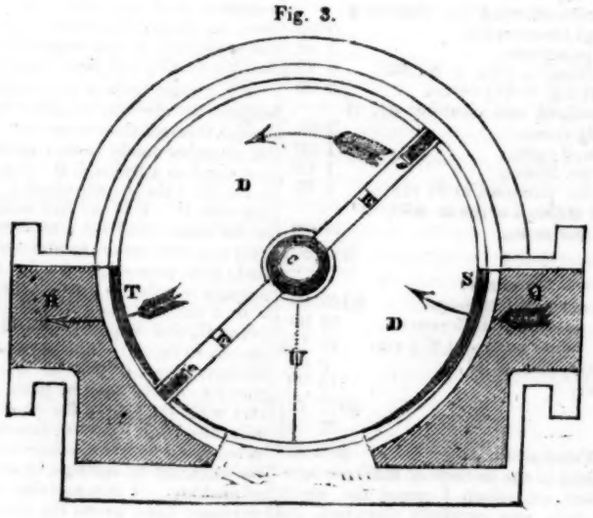
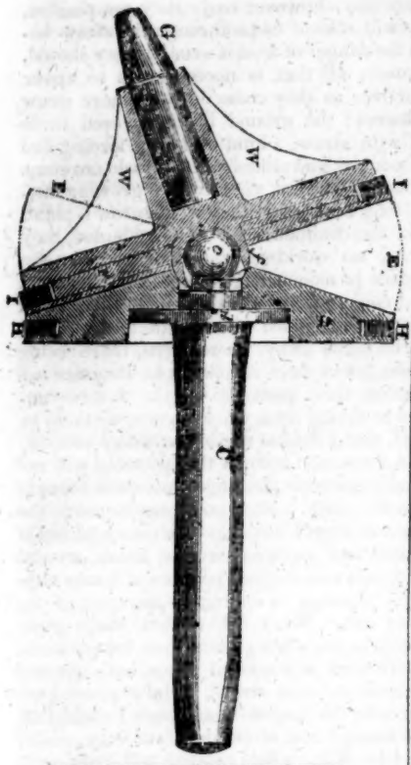


Fig. 4.



[*From the Genesee Farmer.*]

POTATOES.—*The difference in raising them to Sell or having to Buy.*—A few years since, as I was measuring some potatoes to my neighbor W., he put the following question to me:—How does it happen that you always have potatoes to sell and I always have to buy? As to that matter, I replied, I do not know; but I can tell how it is with some men. How? In the first place, they have to buy their potatoes, and thinking they will be economical, and will not buy more than they can help, they pick out all that will do to eat, and save the rest to plant. In the spring of the year they calculate that any ground will do for potatoes; of course the poorest part of the lot is selected for that purpose. They say potatoes will do to plant any time: they are left until other crops are put into the ground. Then the potatoe ground is probably ploughed, as potatoes will grow any how; the small potatoes are planted; pretended to be hoed once, and, peradventure, not at all. In the fall, it is the last work they do, before the ground shuts up, to dig their potatoes. Some of them are spoiled by the frost, and the others are injured before dug. They are carried to the cellar, or put into a heap to bury, what few they have—for depend upon it they have a small crop—and if they are secured so that the frost does not effect them, they rot, and in the spring they want to buy more potatoes, saying they planted enough but they did not do well.

That is the very way that I have worked it, he replied. I could not have given a better description myself. Now tell me how you do to raise potatoes, and always have them to sell.

Well, sir, in the first place, I select the best piece of land I intend for a spring crop, or at least as good as any for potatoes. I get my land in good order as early as the ground will admit; if I assort my potatoes I plant the largest; hoe them well and in season, and always calculate to dig them before I husk my corn. I get my potatoes dug before the heavy rains come in the fall; my potatoes are dry when buried, and in the spring I generally have potatoes to sell.

What time in the moon do you plant? says he. I dont plant in the moon, I replied: I say, I select good ground—get my ground in good order, and plant in good season, and dont regard the moon at all. But, says he, I always thought I must plant in the full moon. Well, you always have to buy potatoes, you say, and may be that is the cause. Well, says he, I have as good land as you, and I will try and see if I can't raise potatoes to sell as well as you. The next season he told me he had potatoes to sell, so I lost one good customer. L. C.

Hume, Allegany county, Dec. 4, 1832.

ON FODDER.—There are none of the farming operations that require more attention than feeding cattle through the winter, and yet by many no one thing is more neglected. We do not mean that farmers neglect to feed their cattle, but that they neglect making calculations as to the profit and loss attending it. We have remarked that in this vicinity a good milch cow, in the spring, bears the same price as two tons of hay. Most good farmers, we believe, will allow, that a cow fed upon hay alone, will consume two tons during the winter, or from the time when they commence feeding them until they are turned out to grass in the spring. The inquiry then arises, is not the loss equal to the worth of the cow in the fall, when so fed? We answer yes, together with the trouble of feeding them. In the neighborhood of large towns, where hay commands a great price, we consider it bad policy for farmers to keep more cows than they can winter upon such kinds of food as are produced from the farm, and will not command ready cash. This observation will not always apply to farms distant from market, nor to the keeping of dairies near large towns for the purpose of supplying them with milk. There are many kinds of feed which may be prepared both for horses and cows, by labor during the winter, wherewith they may be fed at less expense, or will consume less of the merchantable produce of the farm, than when fed on hay, by which the labor of winter becomes more valuable than when this is omitted.—Straw, when chopped fine and soaked or boiled with a small quantity of meal, potatoes, pumpkins, carrots or cabbage, makes an excellent feed for cattle or horses, and milch cows fed with such food will give more milk than when fed with hay alone.

In our long northern winters, sheep require some food of the kind, otherwise they are apt to become costive and feverish, which never fails to give their wool that yellow cotted appearance, which is commonly called the effects of being hide bound. We call the attention of farmers to this subject, wishing them to take such notes the present winter as will enable them hereafter to pursue that course which shall be found profitable. From the price hay bears in the country, it cannot be transported by land to any considerable distance to market without loss, but the same amount of property may be driven at a small expense. We would ask, why is there not a sure profit attending the selling of cows in the fall and purchasing in the spring, equal to the difference between driving a cow or transporting two tons of hay the same distance, allowing the prices of both were regulated by the same market?

ALBANY HORTICULTURAL SOCIETY.—At a meeting of this Society, on Friday, 1st February, 1833, the following Gentlemen were elected as Officers for the ensuing year:—

JESSE BUEL, President.
AMBROSE SPENCER, 1st Vice President.
JOHN TOWNSEND, 2d do.
JAMES STEVENSON, 3d do.
D. B. SLINGERLAND, Treasurer.
R. V. DE WITT, Corresponding Secretary.
B. P. STAATS, Recording Secretary.

COUNSELLOR.

E. Corning, John S. Walsh, E. C. Delavan, Joel A. Wing, G. V. Denniston, V. P. Douw, C. R. Webster, Jno. Willard, John Woodworth, Alfred Conkling, H. G. Wheaton, Peter Wendell, Richard Yates, Agustus James, Jno. W. Bay, B. F. Butler, J. T. Norton, G. W. Ryckman, John E. Lovett, George McPherson, William Barney, H. L. Webb, M. French, and Jno. I. Godfrey.

POT AND PEARL ASHES IN NEW-YORK.—It appears from the annual report of the Inspector of Pot and Pearl Ashes in the city of New-York, submitted to the Legislature, that there were inspected there during the year 1832, 34,719 casks of pot and pearl ashes, containing 15,627,547 pounds: Value estimated at $727,644 81. Receipts by the inspector for inspection fees, and for storage, $20,499 83. Expenses, $16,603 33, leaving $3,896 50 as the salary or emoluments of the inspector.

Comparative statement of Ashes shipped from Canada the past two years.

	Pot.	Pearl.	Total.
In 1831.			
Shipped	29,246,	19,667,	48,913
Remaining in store,	493,	497,	990
In 1832.			
Shipped	24,960,	14,002,	38,962
Remaining in store,	986,	2,760,	3,746

Of the quantity shipped the past season, there remains 2,105 barrels ice-bound in the river St. Lawrence.

BONE MANURE.—This most valuable article, which is extensively used in England, has only recently become known to American agriculturists. Bones collected in the towns and cities are reduced to various degrees of fineness, and in that state applied to the ground. The last number of the New-York Farmer contains some information on the subject, which we shall hereafter insert in the Star. We would, however, inform our readers that the article is now sold by Mr. JOHN L. WARD, of Brooklyn, at from 30 to 40 cents per bushel. We hope our Gardeners will give it a fair trial.—[L. I. Star.]

CALVES for veal should be kept from the cow—suck only two tits the first week—three the second, and the whole after the two following weeks—then kill them. Those to be reared should come as early as April—have more or less milk for ten or twelve weeks. After the first fortnight, mix in skim milk, or hay tea, or meal and water. When they are a month old, place some sweet hay in cleft sticks, and they will soon learn to eat it. As soon as grass is green, turn them out—give them milk and water for a few days, and house them for a few nights—they should be housed early in the fall, and kept warm in winter.—[N. E. Farmer.]

The Western Country.—*Prairie du Chien.*—A traveller in the North Western Territory, Mr. Caleb Atwater, in his description of a portion of that country, has the following reflections. The regions of the North-West are thought to be as delightful as they are immense:

Were all the country south of Fox and Wisconsin rivers, having for its eastern boundary Lake Michigan and the Illinois river to its mouth, and the Mississippi for its western boundary, would in a few years become a respectable State. Nature seems to have intended this country should form a State by itself; but man has determined otherwise.

North of the Wisconsin and Fox rivers, another State might be formed, on the east side of the Mississippi, which would be about as large as Virginia.

On the west of the Mississippi, above the State of Missouri, there is a territory sufficient for two States, each larger than Virginia. If the upper country should be formed into four States, they would eventually be the most populous and powerful States in the whole confederacy. Nature has intended that vast region for thirty millions of human beings at some not very remote period of time. For purity of air, and of water—for mineral wealth, fertility of soil, healthiness of climate, and of almost every thing else valuable to man, the whole country is equal to any portion of the earth's surface.

The future population of this vast region, dwelling as they will on the highest table land in the United States, can easily descend the water-courses, either northwardly, down Red river to Hudson's Bay, or southwardly, down the Mississippi to New-Orleans—eastwardly, down our northern lakes to New-York, or down the St. Lawrence to Quebec. Nature has opened these roads to and from this region, and man is now using them. During the next hundred years, Ohio, as a State, will take the lead in wealth and business, and in the number of her people, compared with any State west of the Alleghanies; but eventually Missouri, and any one of the States yet to be formed on the upper Mississippi, may surpass her in wealth and political power. Should not one of the States which I have referred to become the most powerful, then Ohio must be at the very head of our confederacy forever.

Should our people never settle the country west of the Rocky Mountains, (though I feel assured of a row of States on the Pacific equalling our Atlantic ones, within a century to come,) yet there will be, at no distant day, a tier of States north, northwest, and west of Illinois, Missouri, and Arkansas, which will eventually become populous, wealthy, and powerful States.

To all human appearance, the census of 1840 will place the national government in the hands of the people of the valley of the Mississippi. To resist this event would involve the necessity of preventing the revolution of the earth around the sun and upon its axis, and the whole course of nature. To mourn over it involves the extreme folly of repining at the happy lot of the majority of the nation, and of our posterity for ever. From the growth of this nation the lover of liberty has nothing to fear, because our people from the cradle are taught to be republicans. They are such, as if by instinct, and those principles which tend to make them Men are taught them from the first moment they see light, breathe American air, and taste their mother's milk.

The same remark might be made of all the country west of the Wabash, extending from the Mexican Gulph to the Frozen Ocean; parts of Louisiana, where the pine woods are, and where some persons wish to locate all the Indians, excepted. With the exceptions already made from the Wabash directly westward, and from the Missisipppi below lat. 37 degrees north, that whole region is one vast natural meadow. Its soil is as fertile as any lands can be, and when planted with trees, and cultivated by good husbandmen, it will furnish food enough for three hundred millions of people. Grass enough now grows there for all the tame animals, whose food is grass, now in the world.

This vast region in its present state is of little value; but the time will certainly arrive when it will be covered with farms, and animated with countless millions of domestic animals. There golden harvests will wave before every breath of air that moves over its surface—there great and splendid cities will rear their tall and glittering spires—and there countless millions of happy human beings will live and move, and display talent that will ennoble man, and virtues that will adorn and render him happy.

The longest, the most durable, and the best rivers in the world, intersect and pass through this country, standing on whose banks there will yet be some of the largest cities in the world. Comparatively speaking, but a few persons have ever seen this country. No tongue and no author have described it; but it is there—it will be seen, it will be described, and it will be settled, improved and occupied by countless millions of the human race. Its rivers will be cleared of the impediments to navigation all the way to the Rocky Mountains; the roaring of the guns of the steamers, the stage driver's horn, and the loud huzzas of happy throngs, will be heard along all these rivers, and at the foot of the mountains.

Wheat Straw for Potatoes.—Our readers may glean from the following communication to the Southern Planter, by Dr. Harden, some useful hints relative to raising Potatoes, particularly those intended for early markets. Leaves and some other similar litter will answer the same purpose. It is possible that cedar bushes or branches laid thickly over Potatoe beds may be of service. We regard the experiment detailed by the Dr. to be an important one. Farmers should, during the leisure of this month, have ready from the wood many loads of leaves.—[Ed.]

If, says the writer, when the corn has been twice worked over and the ground is very wet, directly after a hard rain, the surface of the ground be covered tolerable thick with wheat straw, it will be apt to produce a very fine crop without farther work, and the year after it will produce an abundant crop; this however is a busy part of the season, when we have little time to spare.

The best use I have ever made of wheat straw, and I think it the most profitable use that can probably be made of it, is as follows: and although this way of using it is not new, yet many have not tried it.

The ground being well broke up, run it off in rows of the usual width, just sufficiently deep to cover the Irish potatoes, plant them as usual, and cover them. Now cover the ground with straw about three feet deep, and if the straw will not hold out to cover them all this deep the deficiency may be made up with leaves. In this way the potatoes may be planted very early. It is known that when potatoes are bitten by frost, they never do well. In this way, however early they are planted, they will seldom come through the straw before the danger of frost is over. If they should, however, all that is necessary is to cover them over as they come out with more straw or leaves; the ground being covered three feet with straw, a kind of hot or forcing bed is produced, and although the tops do not come through the straw, yet they are growing finely a long time before they would grow if planted in the common way. Once planted, they require no working or further trouble; the produce is astonishing; those who have not tried could not believe that such a bountiful crop could be made with so little labor. They can be taken away as required, there being no danger of their remaining as they are till planting time perfectly sound. I have noticed in taking up a whole square of them to plant, that I did not see one unsound potatoe. It is a common opinion that potatoes will not do well unless the planting potatoes are brought from the north. Seed potatoes planted in the common way I have no experience of, but if planted and saved as directed above, we can make and save as good potatoes at home, either for planting or eating, as any part of the world can. Many believe that whole potatoes do better when planted than cut potatoes. I have tried this several times, both planted as usual and with straw. I have planted one row with the largest whole ones I could find, and another row of potatoes cut very small; the tops of the whole potatoe will grow very large, but I never could distinguish much if any difference in the produce. I have thought the rows of cut potatoes best, but the appearance was so small that I do not feel certain. It matters not how close the tops of plants are, so as the roots have sufficient distance. I believe if the potatoes were planted as directed and covered one foot with straw, that another crop might then be planted and covered another foot; and another crop planted and again covered a foot or so, so as to produce three crops on the same ground; however thick the tops might be, the roots would all be separated and not interfere with each other. I have not tried it, but I have this fact to support such an opinion: I was planting a large patch of potatoes and one of my boys stole a parcel; when the work was done I carried all the hands with me to a distant field; the fellow found his potatoes troublesome, yet had no way to dispose of them, and as he passed by a shuck pen stopped and pushed his potatoes between the rails into the shucks, where he forgot them; as this pen of shucks was not wanted, it remained there without being noticed; one day, in riding by it, I was astonished to find the finest potatoe tops growing from between the rails, between two and three feet from the ground, with nothing but the shucks to grow in—this is worth trying.

Now although we have, by thus employing our wheat straw, made the largest crop of potatoes with the least labor, yet we have only got part of the benefit to be derived from the straw. When all the potatoes are removed, if all the straw was also taken away, the ground, from being so long covered, will be found rich. The quantity of straw on the ground, after taking up the potatoes, is so great that it cannot be ploughed; one half or more should be carted away; this might be used to cover another crop of potatoes, or put

in the manure lot; now sow some corn on the ground and turn in the flock of hogs. They will, in searching for the potatoes and corn on the ground, root up the straw and earth and mix them together, so that the plough will go through it without difficulty; this planted in corn will make such a crop as will fully pay for all the labor. The best corn I have ever made was thus produced. But, alas! all the ground receives from this management this one crop of corn takes away; the next year, when planted in corn, the produce is little better than common. But how shall we make a better disposition of our straw? In the first place, we got a most bountiful crop of potatoes without the trouble of working them; we then take away sufficient straw to cover nearly half as many potatoes for another crop, and then the ground put in corn will make a splendid crop. ROBERT R. HARDEN.

Profitable Cultivation—Use of Roots in Farming. By Mr. BENJAMIN BUTLER. From the New-England Farmer.

Mr. FESSENDEN,—Dear Sir: Messrs. Featherstonhaugh and J. Buel have written so much and so ably on the advantages of raising and feeding roots to stock, that it would be presumptuous in me to say any thing more on this subject, but as their communication induced me to try the experiment, perhaps an account of my success may prevail on others to follow my example. In England it is well understood that no farmer can prosper without his turnip field, and it is likewise believed that in this climate it is impossible to feed the crop out to advantage, even from cellars during the severity of winter; to remedy this inconvenience, I have erected a building partly on the Pennsylvania plan, 40 feet square, and sufficiently large to hold my grain, straw, and threshing machine; underneath this is a stone basement laid with lime cement, 9 feet in the clear. Across the upper end, and next to the bank, is a cellar, occupying one fourth of the basement; this is so arranged that it can be loaded from a shoot and from a tipped-up cart, and with a door below sufficiently large to admit a wheelbarrow, which is moved on a level from the vault to the basement, in which the air is expected to be at all times so temperate that we can feed without freezing the roots, and when the weather is mild the wheelbarrow can be pushed forward into the sheds adjoining on the same level. By these means my roots are preserved at all times in a sound state, and may be fed when wanted with a great abridgment of labor. My crop of roots occupied this season two small fields without manure, one containing one acre thirteen rods of stiff loam, resting on gravel; this field was manured last year with 25 loads of sheep dung and 100 bushels of leached ashes, and produced 130 bushels of corn. This season it was ploughed and harrowed with a fine harrow to a garden mould, then rolled and thrown into narrow ridges, two and a half feet apart. It was planted on the 15th of June with mangel wurtzel, the seed drilled on the ridges at the distance of 10 inches; as my seed fell short the field was completed with ruta baga. Part of the plants came up and looked well, but the most of the mangel wurtzel failed entirely. This part of the field was again ploughed on the 25th of July, and sowed broadcast with the common flat turnip, harrowed and rolled. The plants were thinned to 8 inches, (my order was 16, but my man could not bear to lose so many fine plants;) he spent two days in thinning and hoeing the turnips, which grew with great rapidity and soon covered the ground, the tops were from 15 to 16 inches in height; and the bottoms nearly half their thickness out of the ground, and so large as nearly to come in contact with each other. The other portion of the field that was covered with mangel wurtzel and ruta baga appeared very thrifty, the plants all standing and uncommonly large. This field excited a great deal of attention, it was viewed by most of the villagers as a curiosity; three families were plentifully supplied with them from the time they were of the size of an egg until harvested. Twenty bushels were delivered on the field to pay laborers for harvesting, two loads were taken tops and all to the barn to feed, rather more than 100 bushels of the smallest were disposed of to families in the village at 25 cents per bushel, and 16 loads of common turnips, 10 of ruta baga, and 11 of mangel wurtzel, averaging twenty-five bushels to a load, were stowed in the new cellar—but this is not all: we fed five hogs with the tops of the mangel wurtzel about five weeks, and six oxen at work at the same time at noon with ruta baga leaves. Again, the ground is clean and in good order for a crop of barley and grass seed, and one team may easily plough, harrow, and roll the field in one day. The tops left on the ground gave a full feed to 6 milch cows and 200 sheep for 7 or 8 days. The other field was an entirely different soil; it was originally a hemlock swamp, it had been lately drained, and the stumps drawn off or burnt; this portion was ploughed last year for the first time, deep, with strong plough and six oxen; it proved to be a rich vegetable mould resting on stiff clay, and was cropped on the furrow with buckwheat; it produced a large crop of straw and a fair crop of grain this season; it was ploughed once, but not so deep as to disturb the original sod, and all sown with oats and grass seed, excepting between half and three quarters of an acre reserved for ruta baga. Owing to the ground being wet, it was not worked until the 28th of June; it was then thrown into narrow ridges and drilled on the top of the ridge with ruta baga, but it was yet too wet, the ground baked, and the plants came up irregularly; we were unable to work it until the first of August, when the ground after a shower was ploughed, hoed out, and the ridges filled by transplanting. The ground worked uncommonly light and mellow, and from this time the plants grew rapidly, although far behind the other field; we harvested them three weeks too early, while they were in rapid growth. Notwithstanding these drawbacks, we pitted from this field (the new cellar not being finished) 375 bushels.

If I have been more successful in my crops than my neighbors, it is owing partly to diligence, and adopting the maxim that what is done shall be *well done*, and also to adopting the practice of my friend Earl Stimpson, of Saratoga, of depositing my manure on the top rather than the bottom of the furrow. I begun my improvements by ploughing deep with six oxen and a strong plough. This is done as well to level the ground as to bring up the stones below any future ploughing, which are carefully picked and carted off the ground, and after the land is perfectly cleaned, worked into a fine garden mould; the manure is then applied to the amount of 10 to 25 loads of 26 bushels to the load. This is spread evenly on the surface and well incorporated with the earth with a fine tooth harrow; in preparing these fields for their regular rotations much labor is frequently expended, but in no instance, except in the wet clay bottom, has the crop failed, always amply repaying the extra labor, as well as the labor incident to the production, and the land is at once increased in value from $10 per acre, (the original cost,) to pay the interest on at least $100 per acre. It is wonderful to notice the good effects of comparatively small quantities of manure applied as above. It may be asked, how does the manure operate? Do not the plants receive a greater proportion of nourishment from the air than is generally allowed? Does not the manure rather serve to attract this nourishment, by its fermenting or other properties as well as moisture to the plants, keeping by this means the ground soft and mellow rather than communicating direct nourishment to the roots? The application of plaster and lime warrants some such ideas as suggested above, which I leave to far more able heads to describe.—Thus far I have given a history of my rich crops and mode of securing and feeding them; I believe there is no mistake, at any rate none is intended, and if worthy of record you are at liberty to publish it. I am yours, respectfully, BENJAMIN BUTLER.

Oxford, (Chenango, N. Y.) Dec. 26, 1832.

CULTIVATION OF THE POPPY.—There are many practitioners of medicine residing in country situations, who might very conveniently raise all the opium necessary in their practice, and for sale. The *Papaver somniferum* has yielded excellent opium to many of our citizens, on a small scale; and during the present session of the Medical College of Ohio, a student presented me with a small portion of this article raised by his own hands, and of superior quality. But it has been raised largely, as may be seen by reference to the American journals, and especially the Medical Museum for 1810.

The plant thrives in the Southern states, and any where in the latitude of Philadelphia. The state of Ohio, therefore, and all the south-western states, will answer for the cultivation of the poppy. The seed may be sown as soon as the ground can be prepared, and the better the soil the larger the crop. They may be planted pretty much as corn is, only that the rows need not be as far apart, and the plants may be closer together in the rows. At first they require a little hilling, and if the season be dry, they should be watered until they gain the height of ten inches, after which they may be left to themselves. A day or two after they have shed the petals, four incisions are to be made in each poppy head longitudinally, with a sharp knife, and at equal distances apart. These incisions should be made from 6 to 9 o'clock A. M., and at noon the juices will be found to have exuded, and to be collected in tears, from half an inch to an inch in length. The same number and kind of incisions may be made at three o'clock, P. M., and at six; the same sort of tears will be seen as in the morning. The color of the juice is from a reddish brown to an almost black color, by the action of the air.

In this way a single head will yield from 15 to 40 grains of pure opium, according to the testimony of Dr. Anthony. Will not

our medical brethren avail themselves of so simple a method of procuring their own opium, in an unadulterated form?—[West. Med. Gazette.]

AGRICULTURAL SCHOOL.—*State Agricultural Society.*—We take pleasure in laying before our readers the following important document. We hope they all will read it, reflect on it, and firmly resolve to *act* in accomplishing this great object in view.

The committee appointed at the first meeting of the Society, to report a plan for an Agricultural School, with an estimate of the expense necessary to establish and put the same into operation, together with their views of such an establishment, beg leave to submit the following Report:

The main objects of the proposed school are, to impart to agriculture the efficient aid of the sciences, and to furnish it with the best models of practice; to teach, simultaneously, in the period of youth devoted to academic studies, the practical operations of husbandry, and such branches of useful knowledge as may tend to elevate its character, and increase its products. The *plan*, therefore, should embrace,—

1. A Farm, of sufficient extent to afford room for the diversified operations of tillage, cattle and sheep, husbandry, and of orcharding and gardening—on a scale that will admit a fair comparison being made of crops, of breeds of cattle and sheep, and of the varieties of hardy fruits;—and sufficiently diversified in soil and surface as to admit of satisfactory experiments:

2. A Farm House and Farm Buildings, which may serve as models of convenience, taste and economy, and accommodate the head farmer and his assistants:

3. A School Building, for the accommodation of teachers and scholars:

4. A Library and Philosophical Apparatus:

5. Stock and Implements for the farm: and,

6. Shops for the construction of farm implements and machinery, for the use of the farm, for the illustration of mechanical science, and to afford practical instructions to the pupils in mechanics.

These items of expense, which may be considered preliminary and permanent, together with the cost of the furniture required for the school building, are estimated at $7,500.

1. The plan of Education might embrace,—Practical instructions in the various operations and labors of the farm, the garden, the orchards and the shops: and,

2. The study of the natural sciences generally, mathematics, mechanics, chemistry and drawing, so far as these may conduce or become subservient to agricultural improvement,—together with such other branches of knowledge as will qualify the students for the higher duties of civil life,—such as will fit them to become independent electors, discreet jurors, faithful magistrates, and wise legislators.

As prerequisites to admission to the school, the pupils might be required to possess a good common school education, to be at least fourteen years of age, and of good moral character. Four years might constitute a course of studies; and the internal regulations and police of the school might be conformed, in a measure, to those of our military academy.

A department of the farm should be set apart for experiments in husbandry, and the details and results of those experiments accurately registered. The garden and the orchard should contain all the good hardy fruits, and specimens of all hardy plants, that may be useful on the farm, in the arts, in commerce, or that are ornamental,—in order that the relative value of different species and varieties may be determined, and their mode of culture, and process of curing, taught to the pupils,—and the approved kinds furnished for public distribution.

To put the School into operation there will be required,—a principal, professors and teachers,—a steward and servants, for the school;

A manager, laborers and assistants, for the farm;

Machinists and assistants for the shops; and

A practical and scientific manager for the garden and orchard.

The number of officers and assistants which will be required, must depend upon contingencies: and of course the commtttee do not pretend to state with precision, in their estimate, the amount of their salaries and pay.

The proceeds of the school and the farm may be expected to increase for some years, and will materially depend on the terms of tuition. The committee have assumed, as reasonable data, that the number of pupils would average 200, and the average produce of the farm amount to $4,000 per annum, for the first four years. Upon the assumed data, then, the estimate would exhibit the following result.

PRELIMINARY EXPENSES.

Farm of 400 acres, at $30,	12,000
Farm buildings,	6,000
School buildings,	25,000
Library and apparatus,	7,500
Stock and implements,	3,150
Shops and tools,	1,250
Furniture for school,	1,150
Incidental,	1,500
Total preliminary expense,	$57,550

ANNUAL EXPENSE.

Salaries of officers and teachers of the school,	5,100	
Do. of manager and laborers on farm,	1,000	
Do. of machinists,	600	
Do. of gardener,	300	
Expense of boarding 200 pupils at $1.50 per week,	14,400	
Servants for the establishment,	2,000	
		23,400
Estimated annual expense,		$80,950

The Annual Receipts are computed as follows:

Board and tuition of 200 pupils, at $150 per annum,	$30,000
Produce of farm,	4,000
	$34,000

Thus the total expense of establishing the school, and of maintaining it the first year, is estimated at $80,950, and the income, after the first year, it is believed, will be amply sufficient to defray all expenses. Yet to meet contingencies that may occur, and to make up for any deficiency in the estimate, the committee think that an appropriation of $100,000, the surplus to be invested for the benefit of the institution, will nsure usefulness and permanency to the school, and prove amply sufficient to meet all its wants. This sum, if equalized among the population of the state, would operate as a tax of about *five cents* to each inhabitant.

Your committtee have thus complied with the requisitions of the society, in submitting the plan of an Agricultural School, and an estimate of the expense necessary to establish and put the same into successful and permanent operation. It only remains for them to state their opinion of its utility.

The agriculture of a country affords the best criterion of its prosperity. Whether we compare kingdoms, states, counties, districts or farms, the condition of this branch of labor, which they severally exhibit, is a sure index, not only of the pecuniary, but of its moral condition. It is no less an axiom founded in truth, that agriculture prospers or languishes in proportion to the science and skill of the men who manage its labors. It is not the natural fertility of the soil, so much as the intelligence and industry of those who till it, which gives to husbandry its interests and its rewards. The man who devotes the energies of a highly cultivated mind, to the improvement of this primitive and all important branch of labor, is a public benefactor. Cincinnatus did more to immortalize his name, and to command our applause, by his love of rural labors, than by his military exploits. Washington, amid all the honors that irradiated his brow, sought his highest pleasures in the business and retirement of the farm. And it was the first remark of our present chief magistrate, to the writer, after introduction, that he would not forego the pleasures of the farm for all the honors and emoluments that this nation could confer upon him. Education enables man to appreciate the wonderful provisions which God has made for his happiness in rural life, and imparts to him the ability of diffusing instruction and happiness to multitudes around him.

It should be the policy of government, therefore, which watches over the interest of all, to infuse into the labors of husbandry all the lights of science and knowledge—to take care to expand and elevate the minds of those who are to give it efficiency and character, and to call forth skill and industry by proffered rewards. With us these considerations possess peculiar force. Our population and business are emphatically agricultural, and every aid which is extended to this class, benefits, indirectly, every portion of the community. Agriculture constitutes the fountains of the thousand rills, which, swelling and traversing every part of the state, propel the spindle and the hammer of the artizan and the manufacturer, and finally, by their union, make up the mighty stream of commerce which unceasingly flows into the Atlantic.

That our agriculture is susceptible of improvement—that the products of its labors may be doubled, nay quadrupled, must be apparent to those who have compared our husbandry with that of some European countries, or who have contrasted, at home, the well cultivated district, or farm, with those which are badly managed. How is the desired amelioration to be effected? How can a better husbandry be so well promoted, as by teaching it to our youth—by sowing our seed in the spring-time of life? Prejudice no where retains a stronger hold than among farmers who have approached or passed the meridian of life. While some retain old practices, for want of confidence in their knowledge to guide them in better ones, others lack the first requisites to improvement—a consciousness that their system is not the most useful; while not a few are influenced, in their hostil-

ity to public means of improvement, by the desire to keep things to their own level. If we would efficiently improve this great branch of business, and elevate its character, as well as the character of those who are engaged in its operations, we must do what universal experience has shown to be the only sure method:—we must lay our foundation in the rising generation—we must teach the young idea how to shoot—we must instruct the head to help the hands. Our physical and mental powers are twin sisters. They lighten each other's labor, and mutually impart a zest to each other's enjoyments. And as it is becoming common to introduce manual labor into literary schools, it is courteous that literature and science should requite civility, by associating with the inmates of schools of labor.

Agricultural Schools, although of modern date, have nevertheless been established in most of the states of Europe, and their utility has been fully demonstrated. Who has not heard of the school of Fellenburgh, at Howyl, or of Von Thayer, at Moegelin—to which young men are sent from every part of Europe, and even from America? In France and Prussia, Agricultural Schools have been founded and maintained by the governments. If they are found to be beneficial, and worthy of governmental support, in countries where power is vested in the few, how much more salutary must they prove here—where our institutions receive the impress of their character from the many, and where the perpetuity of these institutions depends emphatically upon the intelligence and virtue of the agricultural population. Despotism will never flourish in the American soil, but through the ignorance, and we may say consequent depravity, of its cultivators.

Your committee recall to recollection, with feelings of pride, the munificent benefactions of the legislature, to advance the literary character of our state; and the fact, that comparatively nothing has been done, legislatively, to improve our agriculture, which employs five-sixths of our population, can only be ascribed to the fact, that nothing has been asked for—nothing thought of. Our public colleges and academies, for literary instruction, are numerous and respectable. They meet our eye in almost every village. But where are our public schools of labor? Where is the head taught to help the hands, in the business which creates wealth, and which is the grand source of individual and national prosperity and happiness? Our literary and professional schools have been reared up and sustained by the expenditure of more than two millions of dollars from the public treasury, and they continue to share liberally of the public bounty. It will not, however, be denied, that the benefits which they dispense are altogether partial—that the rank and file of society, destined by heaven to become the conservators of civil liberty, are virtually denied a participation in the science and knowledge—in the means of improvement and of happiness, which they are calculated to dispense. Is it not a mandate of duty, then, as well as of expediency, that the benefits of public instruction should be more generally dispensed? We hazard not the fear of contradiction in assuming, that if a moiety of the public monies, which have been appropriated to literary schools, had been judiciously applied, in rendering science subservient to the arts, and in diffusing the higher branches among the laboring classes, the public benefits from the appropriation would have been far greater than they are at the present day. How many hundreds may now be pointed out, of liberal education, who are mere cyphers in society, for want of the early habits of application and labor, which it is the object of the proposed school to form and to infix! And how many, for want of these habits, have been prematurely lost to their friends, and to a purpose of usefulness for which man seems wisely to have been created—that of doing good to his fellows.

From a full conviction, that the interests of the state not only warrant, but require, an appropriation of public monies to this object, your committee beg leave to recommend to the consideration of the Society the following resolution:

Resolved, That a respectful memorial be presented to the Legislature, in behalf of this Society, and of the great interest which it represents, praying that suitable provision be made by law, for establishing a School of Agriculture, on the plan recommended in the preceding report; and that the co-operation, in this application, of societies and individuals, friendly to the object of the petition, be respectfully solicited.

Albany, Feb. 14, 1833.

Receipt for good House Soap, &c.—Having lately returned from the sea shore, where the house-keeper had but twenty bushels of ashes, he informed me that he made a barrel of superior soft soap with ten bushels of clam shells burnt, added to the above quantity of ashes. Clam shells not only make good soap but the whitest and the best cement, and the best of lime for mortar and whitewash for ceilings.—[New England Farmer.]

Feeding Cattle on Fish.—The cattle of Provincetown feed on fish with apparently as good a relish as upon the best kinds of fodder. It is said that some cows, kept there several years, will, when grain and fish is placed before them at the same time, prefer the latter, eating the whole of the fish before they touch the grain. Like one of old, we were rather incredulous on this subject, till we had the evidence of ocular demonstration. We have seen the cows at that place boldly enter the surf in pursuit of the offals thrown from the fish boats on the shore, and, when obtained, masticate and swallow every part except the hardest bones. A Provincetown cow will dissect the head of a cod with wonderful celerity. She places one foot upon a part of it, and with her teeth tares off the skin and grisly parts, and in a few moments nothing is left but the bones. —[Barnstable Journal.]

Massachusetts Agricultural Society.—The Committee of the Massachusetts Agricultural Society, "On Vegetable and Grain Crops," having attended the duty assigned them, award as follows:—

To William Carter, of Fitchburg, in the county of Worcester, for his crop of Potatoes, being 691¼ bushels to the acre, the premium of twenty dollars.

To Adam Knight, of Newbury, in the county of Essex, for his crop of Winter-rye, 45⅝ bushels the acre, twenty dollars.

To Hooker Leavitt, of Greenfield, in the county of Franklin, for his crop of Winter-wheat, being 38 bushels and 22 quarts on an acre—or rather on 3 rods short of an acre, twenty dollars.

To Henry Sprague, of Princeton, in the county of Worcester, for his crop of Barley, being 54⅜ bushels to the acre, twenty dollars.

The Committee, in justice to other claimants, and thinking it may be useful, deem it proper to notice the applications for premiums of the following persons, and to recommend that the several statements, as to the mode of culture not only of those to whom premiums have been given, but of the unsuccessful candidates, be published as part of this report. In the judgment of the Committee they are all of them well deserving the attention of farmers.

Gideon Foster, of Charlestown, county of Middlesex, 38⅛ bushels of Winter-rye the acre.

Tristram Little, of Newbury, county of Essex, 45 bushels and 20 quarts of Winter-rye the acre.

Nathan Smith, of Roxbury, county of Norfolk, 43¼ bushels of Winter-rye the acre.

Payson Williams, of Fitchburg, county of Worcester, 613⅜ bushels of Potatoes on an acre.

All which is respectfully submitted.

P. C. Brooks, per order.

Boston, January 12, 1833.

Fitchburg, January 4, 1833.

Hon. Peter C. Brooks,—Sir, yours of the 25th ult. requesting information respecting my crop of potatoes, is received.

The soil upon which the potatoes were raised is a warm deep loam, sloping to the south-east, and for five years previous to the last has been grass-land, and mowed each year. The land was ploughed in the month of November, 1831, harrowed and cross-ploughed in the month of May, 1832. I then spread forty cart loads of horse manure upon the furrows and ploughed it in; and then furrowed two and a half feet apart, and planted the seed in rows or drills. The seed was twenty bushels of the long red potato, and twenty-five bushels of common blue. The planting was quite the last of May. As soon as the tops appeared, the land was ploughed and hoed; and when they were about 12 inches high, ploughed and hoed again. I kept no minutes of the expense of cultivation, and am therefore unable to state it particularly. There was no further labor or manure expended, than as above stated, and no extra expense, or more pains taken, than in ordinary cases.

Very respectfully, your obedient servant,

W. Carter.

I, Joseph Smith, of Fitchburg, in the county of Worcester, and Commonwealth of Massachusetts, of lawful age, do depose and say that I was present and assisted to dig and measure the potatoes raised on one acre of land the present season, situate in said Fitchburg, and owned and cultivated by Mr. William Carter, of said town, being the same acre measured and surveyed by P. F. Cowdin, as appears by the certificate hereto annexed, and the whole quantity of potatoes raised on said acre of land was six hundred and ninety-two and one-half bushels. Joseph Smith.

Fitchburg, November 19, 1832.

Commonwealth of Massachusetts.

Worcester, ss. Nov. 19, 1832.

Then the above named Joseph Smith, personally appeared and made oath that the above written affidavit by him subscribed was true.

Before me, Ebenezer Torry,
Justice of Peace.

Newbury, Oct. 29, 1832.

To Jonathan Winship, Esq., Secretary of the Massachusetts Agricultural Society.

Sir,—I send you a statement of my method of raising a crop of winter-rye, on one acre of land the present year, which I wish to enter for a premium. The soil is a gravelly loam, rather dry than otherwise. The land was planted with corn in the spring of 1831, and manured in the hills with about six cords of manure to the acre, of common quality. In the month of August following, said acre was sown with three pecks of seed, and hoed in the usual manner. In the month of August of the present year, the rye was reaped and threshed, and found to measure forty-five bushels and five eighths of a bushel. There is standing on said acre of land seventy-five apple-trees, from two to six inches through at the root. Adams Knight.

I hereby certify, that I assisted in reaping, threshing and measuring the above-mentioned rye, and there was forty-five bushels and five-eighths, as above stated. Timothy K. Noyes.

Introduction of Insects into a Country. By T. W. Harris, M. D. Extract from an Address before the Massachusetts Horticultural Society.

The introduction of foreign insects, in a country before uninhabited by them, is a circumstance of more importance than at first would be anticipated. It may occur in various ways. Man, in his wanderings and migrations, has been instrumental in the dispersion and colonization of a multitude of insects. They adhere to his garments and bedding, riot in his stock of provisions, and lurk among his imported seeds, fruits, plants, and drugs. The bed-bug, the flea, the cock-roach, the bacon-grub, (Dermestes lardarius,) and the meal-worm, (Tenebrio molitor,) have been universal travellers, and are now citizens of the world. Commerce brought the first of these insects to England from the continent at an early period. "The Scotch," it has been said, "bewail its introduction among them as one of the evils of the union, and for that reason distinguish it by the name of the English bug." Kalm observes that it was unknown to the Northern Indians of America. The common house-fly is stated to have been brought by shipping to our shores, where it had not been seen before the arrival of Europeans. The sugar-mite, (Lepisma saccharina,) a native of the West Indies, is now rather common in Europe and America. The violet-colored borer, (Callidium violaceum,) of the pine, originally indigenous to our forests, is now naturalized in Europe, having been carried thither in timber from America, while in return we have received from thence another pine-eating borer, (Callidium bajulum,) whose mischievous powers render it a formidable assailant of wooden edifices. This insect, we are informed by Kirby and Spence, does material injury to the wood-work of houses in London, by piercing the rafters in every direction. Its stomach seems to have the insensibility of that of an ostrich, and its jaws the strength of iron nippers: for it has been known to perforate sheets of lead one-sixth of an inch in thickness, with which roofs were covered, and in its stomach fragments of the metal were discovered. The pea-bug (Bruchus pisi) of America is now found in England and a part of the continent of Europe. The minute-beetle, (Anobium paniceum,) so common in ship-bread, is a native of Europe; it is often seen in our vessels, and occasionally on shore. The notorious poplar-worm, (the larva of the Papilio Antiopa,) a spiny catterpillar, whose falsely reputed venomous powers caused almost the extermination of the Lombardy poplar some years ago, is not indigenous to this country, but was probably introduced with the tree it naturally inhabits, but which it deserts in preference for our more abundant willows and elms. The nettle and thistle have brought with them from Europe some of their peculiar insects, (the Papilio Atalanta inhabits the nettle, the Papilio Cardui the thistle,) which happily are more serviceable than the weeds they have accompanied. It cannot be denied that many of our destructive insects are now spread far and wide through those sections of the Eastern continent which have had commercial intercourse with America; but it is evident that we have not been gainers by an exchange, for in this country are now naturalized immense numbers of foreign insects, whose ravages are by no means compensated by the benefits derived from the Asiatic silk-worm, at this time an object of so much interest to statesmen and manufacturers, nor by those annually abstracted from the European honey-bee, "the white man's fly," now, thro' the instrumentality of our forefathers, swarming even in the Western wilds of this continent.

Food for Oxen and other Cattle.—"Every traveller who passes Alsfett, a little town near Frankfort in Germany, has noticed the remarkable fine cattle of that place, who are fed in the following manner: Straw is cut short by means of a straw-cutter; is then put into a cauldron, with the addition of potatoes and carrots, and boiled till it forms a kind of jelly; this mixed with a sufficient quantity of water is served to the beasts.—The animals so fed require no water, and so well do they thrive on this mess, that they are, notwithstanding the summer labor, ready for the butcher at the end of the year."

Grind all sorts of grain which is intended to be given to cattle or horses. In order to obtain the greatest benefit from it, boil it in water, and while hot add cut straw, stirring it well, and when cool it will be fit to feed out.

The following observations upon fattening cattle were published by Nathaniel Landon, of Litchfield, Connecticut. He says, "I boiled about two quarts of flax seed, and sprinkled it on cut straw, which had been previously scalded, and seasoned with salt, together with some oil-cake and oat-meal: working them into a tub with a short pitchfork, until the whole became an oily mush. I fed a three year old heifer regularly in this way, about two months, when she had eaten about one bushel of flax-seed, with the other ingredients in proportion. When she was butchered she weighed 584 lbs., 84 lbs. of which was tallow. She would not have sold for more than $16 before fattening. I sold two quarters of her for 18 dollars and 13 cents. She cost me not more than ten dollars, exclusive of the hay she ate, which was chiefly scalded as above. On the first of February I began with an ox: I fed him about three months, but not altogether as well as I did the heifer. He digested about one peck of flax-seed per day, prepared as above, which I suppose formed about one half of the fat in these two cattle. The ox was short, measured 7 feet 2 inches, and weighed 1082 lbs. and had 180 lbs. of tallow. He cost me when fattening 25 cents per day; he had previously cost me 35 dollars. My neat gain in fattening these two cattle was more than all I have cleared before in fattening oxen and cows, for fifteen years, and this is owing I think chiefly to the use of flax-seed."—[Rural Economist.]

Cow.—Great attention should be paid to so profitable a creature. At the lowest estimate, her value must be more than five pounds per annum. She should be milked morning and evening, at the same time in the day as near as possible—when near calving put her into a pen by herself—when calved give her warm drink for the first two days—if she does not clean, give her a bucket of warm water in which some wood ashes have been put—card her gently during the winter, till near the time of her calving, then cease. Keep no more cows than you can feed plentifully, both winter and summer. Rich pastures in summer will afford an abundance of milk for butter and cheese, and good keeping in winter will give you fat calves in the spring. Farrow cows should have corn as well as good hay, or milking them for 12 months will render them very thin and poor. In very hot weather cows should be watered three times in a day, and placed in shady pastures. Farmers should bear it in mind, that a farrow cow is not so profitable by one third part as one which calves annually.—[N. E. Farmer.]

[*From the Genesee Farmer.*]

The Yellow Locust.—The locust is raised either from the seed or suckers. The former mode is the one to be adopted at the outset for profit. There is no difficulty in transplanting them, and if care is taken to preserve the small fibrous roots, it is rare that a plant will die. Seed is easily procured in this vicinity, as almost all our trees of any size produce abundance. To make them vegetate freely it is desirable to soak them a few hours in water, which was poured upon them boiling hot. Then sow in drills about four feet apart, and they will come up as regularly and as certainly as beans. Let them remain in their seeding location two years, and in the spring of the third year transplant them to the ground prepared for the purpose. The ground should be well mellowed, and the richer the better. After a year or two the ground can be used as a pasture, without any detriment from the presence of the trees.

Spring before the last I sowed in my garden a few seeds to observe their progress. The first season they grew about four feet high, and half an inch in diameter. The last summer the increase was enormous, and they now measure from nine to twelve feet high, and one and a half inches diameter two feet from the ground.

To test the profit in rearing locust trees we will resort to figures. An acre of land contains 160 square rods, and most lands will easily sustain *four* trees to the rod. On an acre, then, we can raise, for the purpose in question, 640 trees.

I propose to let them grow from the seed twelve years; two years in the nursery, and ten in the field. One fourth of an acre will be abundant nursery room. Let us take ten acres for our field data. Ten acres will sustain 6,400 trees. We will average the cost of an acre of ground at twenty-five dollars. At seven per cent. compound interest, it will nearly double in ten years. Call the cost, then, at the expiration of the ten years, fifty dollars. A thrifty locust tree, twelve years old, is worth, at a ship yard, five dollars. We will suppose it to nett three dollars—we shall then calculate as follows:

Interest on 10 acres of land, cost $25, for 10 years, is $25 per acre, - -	$250
Labor of cultivating, by occasional manuring, &c., $40 per year, - - -	400
Seed, and two years in nursery, say -	100
	$750
Deduct this from 6,400 trees, 12 years old, at $3 each, - - - - -	$19,200
Nett profit for ten years, - - -	$18,450
Now, if you please, deduct one half, for *paper calculation*, and you still have left the enormous sum of - -	$9,225

To what more profitable use can a farmer apply ten acres of ground, supposing he has enough besides to cultivate for his yearly living and profit.

Contrast this statement with the profit on wheat. The average crop is about twenty-

five bushels per acre, and the average price we will call one dollar. About one half of the proceeds is consumed in interest, expense and labor of cultivation. We then have, for ten years, nearly as follows:

Wheat for ten years, from ten acres, at 25 bushels, and $1 per bushel,	$2,500
Deduct one half for interest, expense, &c.,	1,250
Nett profit for ten years,	$1,250

Aside from ship building, every locust tree twelve years old is worth at least one dollar, at the place of its growth, for *posts*. According to the above calculation, we should nett, even for this purpose, over $5,000.

QUERCUS.

GATES vs. BARS.

In times of defence *Bar* all Gates;
In times of peace *Gate* all Bars.

A farmer must be rather an awkward man who cannot make a common farm gate, and a dull mathematician who cannot calculate the advantages of using them instead of bars, in all places where the business of the farm requires frequent passing and re-passing. Let us suppose the detention of a man and team, passing through a pair of bars, to be five minutes more than through a gate, and that he only passes and re-passes once each day for one half of the year, (as bars are generally left down one half of the year,) this would amount to one hour each week, or three and a quarter days in each year. Valuing the time of a man and team at one dollar and fifty cents per day, the detention would amount to four dollars and eighty-seven and a half cents each year, or at seven per cent., the interest upon sixty-nine dollars and sixty-five cents. From this sum deduct four dollars and sixty-five cents, which will build a first rate gate, and sixty-five dollars remains as the true value of it. It requires but little more time to make a good farm gate than to make a pair of posts and bars, either of which may be prepared during the winter. Gates may be hung upon posts set deep in the ground, or framed to a sill; in the latter case, they may have a brace on the outside of either post, which most effectually secures them to their places. Besides being economical, well built gates add much to the general appearance of a well conducted farming establishment. It is by strict attention to a thousand little nameless things that a farmer acquires not only property, but reputation.—[Gen. Far.]

BREAKING OF STEERS.—Yoke them carefully, and let them remain quiet until they will eat their food, which generally takes place in the course of one day. Yoke them again the next, and put them behind a pair of old steady cattle and let them stand till they become familiar with them. This generally takes but one day. The day following yoke them again, and put them behind the oxen as before, put them upon the tongue of a cart or sled. They being now accustomed to the oxen before, they will readily follow, without whipping or beating. They will soon become kind and gentle.—[Rural Economist.]

COLT.—To break him never strike, but often lead him by the side of another horse, with a bridle. When he walks well, bring him to trot after him; then lead him often in the saddle. Then put on a small weight, and gradually increase it. Then let one hold and another mount him, and ride after another horse in a ploughed field, till he learns the use of the bit, and will stop or go on at your pleasure. By this easy method you will break your colt without breaking his spirit.—[N. E. Farmer.]

COUNTY FARMS FOR THE POOR.—The following paragraph is from Gov. Marcy's message:

The method of giving relief and support to indigent persons, by the adoption of the county poor-house system, in most of the counties, has essentially improved the condition of this class of persons, and greatly diminished the charge upon the public for their maintenance. In forty-five counties, farms have been purchased, and poor-houses erected, at an aggregate expense of two hundred and sixty-eight thousand eight hundred and fifty dollars; being an average expense to each county of five thousand nine hundred and seventy-five dollars. In this estimate are not included the almshouse and penitentiary in the city of New-York, which cost five hundred and thirty thousand dollars. The number of persons in the houses on the first of December, one thousand eight hundred and thirty-one, including the city of New-York, was five thousand five hundred and fifty-four; and the average annual expense of supporting each pauper in these establishments, as ascertained from the reports of the superintendents of the poor, is thirty-three dollars and twenty-eight cents. The abstract of the reports of county superintendents, which the Secretary of State is required to lay before you, will furnish the results of the system for the past year.

[*From the American Railroad Journal, &c.*]

BOSTON, February 1, 1833.

COMMON ROADS.—Many advantages present themselves in the original formation of a road, which, as they vary in every situation, cannot all be now enumerated. The judgment of the superintendent must be exercised during the formation in improving every little circumstance which may give permanence to the road, when finished; and in removing every trifling evil which may affect its future stability. It is better that the profile of the road never be level, when this can as well be avoided. I say not this in support of the assertion so often made, that a horse can travel easier on an undulating surface than on a level or one of a uniform inclination, but because the latter road may, with less trouble, be maintained in a dry and solid state, than where the same facilities are not afforded for the removal of the surface water. Again, it will be advisable, in forming the foundation of the road, to give it the same slight curve in the cross section that is proposed to be given to the finished surface, and from the extremities of this curve to have the ground free and clear to the respective drainages; and as much care ought to be observed in removing points of rock or large stone from the foundation as would have been necessary had they appeared at the surface of the finished road, they still exerting, though doubtless in a much less degree, the same unequal and deteriorating effect. Small springs will often occur in the formation; and these, when allowed to remain, become to the surveyor a perpetual nuisance: let them, if possible, be traced off the road, and opened there freely; but if, as sometimes happens, their descent be nearly perpendicular, a small drain must be especially formed to receive them, for no expense at this season can counterbalance the trouble they may afterwards occasion. When the formation of the road occurs in good common earth, no other process is necessary than to give to the metal bed or foundation the requisite forms, keeping it clear as formerly mentioned of all large stones or points of rock.—When the formation occurs in rock it will be proper to interpose a layer of at least a foot in thickness, of clay or earth, between the rock and the road material, experience having shown that the material wears very rapidly on such a hard surface, and that from the same unyielding cause the consolidation proceeds very slowly. When there is a slight degree of elasticity on the bed of the road, the material has been always found to wear best, and the reverse of this case renders all rock foundations bad in practice. A layer of earth interposed will be found a very great advantage. In crossing soft or marshy grounds, the principal object will be to raise the roadway above the influence of the highest flood-waters, and independent of this latter cause it is of consequence always to have it raised several feet above the ordinary level of the marsh, that it may be removed in some degree from the influence of that attractive force by which the damp rises as in a sponge among the particles of earth 12 or 18 inches above the ordinary level of the waters. If the marsh is very soft, side drains will be out of the question, and the only thing that can be done in this case is to give to the surface water every facility of escape by keeping the road round and smooth. The gravel, after having been prepared as mentioned in my last, had better be laid on in two courses, allowing the first in some measure to consolidate, though not entirely so, before the second course is spread, and choosing a convenient season for this purpose, when the weather is moist and damp. It will be of the utmost consequence at this stage of the work to have a set of men stationed at proper intervals along the whole range of road, for the purpose of raking it daily and adding new materials when necessary. Indeed, this should form as natural an item in the estimate of the first cost as any other necessary part of the formation. I see turnpikes abroad are, at the present moment, in a state of indescribability not to be surpassed by any Russian post-track and turnpikes, which, from the traffic on them, could be maintained in the best state of repair, with advantage to their proprietors: but this is out of order.

These remarks on gravel roads, are necessarily, in some degree, vague and general, but I consider the subject itself of much more importance to the country than its now dignified fellow, M'Adamization. The latter is not likely to come into extensive use for a considerable time, and in many of the states there is no probability of its being adopted during the present century. Independent of the high value of labor, which, however, seems continually on the decrease, there wants a proper example of a M'Adamized road of some extent, affording a fair return to its projectors; and though I have little doubt myself, that, on the greater thoroughfares, such a road formed after the best and most expensive model would be a sound and safe investment for capital, I am aware that gentlemen will not, in the mean time, risk their money on the mere assertion of any individual; the first and more common species of road must, therefore, for some time, even in those states where the material for the other exists in great plenty, continue to be the standing road of the country; in these, then, and still more so in the other states, when the material for M'Adamization is not within reach, its improvement must always be a subject of considerable importance. That this species of road is capable of great improvement every one admits, but, at the same time, it has somehow fallen into neglect as beneath the engineer's attention. Nothing can be more fallacious: its improvements are sources of economy to all within its influence—to the farmer in his waggons, his horses, and his cattle—to the public, in the economy of carriage dues, consequent, which in some instances at present form half the cost of many materials brought from the country—and in the saving of horses employed in stages, and every other species of carriage draught.

S. D.

Culture and Manufacture of Hemp. By the Hon. HENRY CLAY.

KENTUCKY, October, 1830.

SIR,—Having promised you some account of the method of culturing and preparing hemp in this state, I now proceed to redeem it. I shall endeavor to describe the general practice of the cultivators, without noticing all the deviations of particular individuals.

The district of country in which the plant is most extensively cultivated, is the Elkhorn region around and near Lexington, which derives its name from a stream discharging itself into the Kentucky river, whose branches are supposed to resemble the horns of an elk. It is also produced in considerable quantities in the counties of Jefferson, Shelby, Mercer, Madison, Clarke, Bourbon and Mason. The soil of that region is a rich, deep vegetable loam, free from sand and with but little grit. It lies on a bed of clay, interspersed with small fragments of iron ore, and this clay in its turn reposes on a mass of limestone lying many feet in depth in horizontal strata. The surface of the country is generally undulating. The rich land, (and there is but little that is not rich,) in this whole region, is well adapted to the growth of hemp, where it has not been too much exhausted by injudicious tillage. The lands which produce it best, are those which are fresh, or which have lain some time in grass or clover. Manuring is not yet much practised. Clover is used in lieu of it. Lands which remain in clover four or five years without being too constantly and closely grazed, recover their virgin fertility. The character of the soil above mentioned does not vary materially from that in the Elkhorn district.

The preparation of the ground, for sowing the seed, is by the plough and horses, until the clods are sufficiently pulverized or dissolved, and the surface of the field is rendered even and smooth. It should be as carefully prepared as if it were for flax. This most important point, too often neglected, cannot be attended to too much. Scarcely any other crop better rewards diligence and careful husbandry. Fall or winter ploughing is practised with advantage—it is indispensable in old meadows, or old pasture grounds intended for producing hemp.

Plants for seed are ordinarily reared in a place distinct from that in which they are cultivated for the lint. In this respect, the usage is different from that which is understood to prevail in Europe. The seeds which are intended to reproduce seeds for the crop of the next year, are sowed in drills about four feet apart. When they are grown sufficiently to distinguish between the male and female stalks, the former are pulled and thrown away, and the latter are thinned, leaving the stalks separated seven or eight inches from each other. This operation is usually performed in the blooming season, when the sexual character of the plants is easily discernible; the male alone blossoming, and, when agitated, throwing off farina, a yellow dust or flour which falls and colors the ground, or any object that comes in contact with it. A few of the male plants had better be left, scattered through the drill, until the farina is completely discharged for an obvious reason. Between the drills a plough is run sufficiently often to keep the ground free from weeds and grass; and between the stalks in each drill the hoe is employed for the same object. The seed plants are generally cut after the first smart frost, between the 25th September and the middle of October, and carried to a barn or stack-yard, where the seeds are easily detached by the common thrail. They should be gathered after a slight, but before a severe frost; and, as they fall out very easily, it is advisable to haul the plants on a sled, and, if convenient, when they are wet. If transported on a cart or wagon, a sheet should be spread to catch the seed as they shatter out. After the seeds are separated, the stalks which bore them being too large, coarse, and harsh, to produce lint, are usually thrown away; they may be profitably employed in making charcoal for the use of powder mills. In Europe, where the male and female plants are promiscuously grown together in the same field, both for seeds and for lint, the male stalks are first gathered, and the female suffered to remain growing until the seeds are ripe, when they are also gathered, the seeds secured and lint obtained, after the rotting, from both descriptions.

After the seeds are threshed out, it is advisable to spread them on a floor to cure properly and prevent their rotting, before they are finally put away for use the next spring. Seeds are not generally used, unless they were secured the fall previous to their being sown, as it is believed they will not vegetate, if older; but it has been ascertained that, when they are properly cured and kept dry, they will come up after the first year. It is important to prevent them from heating, which destroys the vegetating property, and for that purpose they should be thinly spread on a sheltered floor.

The seeds—whether to reproduce seeds only, or the lint—are sowed about the same time. Opinions vary as to the best period. It depends a good deal upon the season. The plant is very tender when it first shoots up, and is affected by frost. Some have sowed as early as the first of April; but it is generally agreed, that all the month of May, and about the 10th of it especially, is the most favorable time. An experienced and successful hemp-grower, in the neighborhood of Lexington, being asked the best time to sow hemp, answered immediately before a rain. And undoubtedly it is very fortunate to have a moderate rain directly after sowing.*

When the object is to make a crop of hemp, the seeds are sown broadcast. The usual quantity is a bushel and a half to the acre; but here again the farmers differ, some using two bushels or even two and a half. Much depends on the strength and fertility of the soil, and the care with which it has been prepared as well as the season. To these causes may be ascribed the diversity of opinion and practice. The ground can only sustain and nourish a certain quantity of plants; and if that limit be passed, the surplus will be smothered in the growth. When the seeds are sown, they are ploughed or harrowed in; ploughing is best in old ground, as it avoids the injurious effect of a beating rain, and the consequent baking of the earth. It would be also beneficial subsequently to roll the ground with a heavy roller.

After the seeds are sown, the labors of the cultivator are suspended, until the plants are ripe, and in a state to be gathered—every thing in the intermediate time being left to the operations of nature. If the season be favorable until the plants are sufficiently high to shade the ground—which they will do in a few weeks, at six or eight inches height,—there is a strong probability of a good crop. When they attain that height, but few articles sustain the effect of bad seasons better than hemp.

It is generally ripe and ready to be gathered about the middle of August, varying according to the time of sowing. Some sow at different periods, in order that the crop may not all ripen at the same time, and that a press of labor, in rearing it, may be thus avoided. The maturity of the plant is determined by the evaporation of the farina, already noticed, and the leaves of the plant exhibiting a yellowish hue; it is then generally supposed to be ripe, but it is safest to wait a few days longer. Very little attentive observation will enable any one to judge when it is fully ripe. In that respect it is a very accommodating crop; for if gathered a little too soon, the lint is not materially injured, and it will wait the leisure of the farmer some ten days or a fortnight after it is entirely done.

Two modes of gathering the plants are practised; one by pulling them up by the roots, an easy operation with an able bodied man, and the other by cutting them about two inches (the nearer the better) above the surface of the ground. Each mode has its partizans, and I have pursued both. From a quarter to a third of an acre is the common task of an average laborer, whether the one or the other mode is practised. The objections to pulling are, that the plants with their roots remaining connected with them are not afterwards so easily handled in the several operations which they must undergo; that all parts of the plant do not rot equally and alike, when exposed to the dew and rain; and, finally, that before you put them to the brake, when the root should be separated from the stalk, the root drags off with it some of the lint. The objection to cutting is, that you lose two or three inches of the best part of the plant nearest the root. Pulling, being the most ancient method, is most generally practised. I prefer upon the whole, cutting—and I believe the number who prefer it is yearly increasing. When pulled, it is done with the hand, which is better for the protection of an old leather glove. The laborer catches twenty or thirty plants together, with both hands, and by a sudden jerk, draws them without much difficulty. The operation of cutting is performed with a knife, often made out of an old scythe, resembling a sickle, though not so long, but broader. This knife is applied much in the same way as the sickle, except that the laborer stoops more.

Whether pulled or cut, the plants are carefully laid on the ground, the evener the better, to cure—which they do in two or three days, in dry weather. A light rain falling on them whilst lying down is thought by some to be beneficial, inasmuch as the leaves, of which they should be deprived, may be then easier shaken off or detached. When cured, the plants are set up in the field in which they were produced, in shocks of convenient size, the roots or butt ends resting on the ground, and the tops united above by a band made of the plants themselves. Previous to putting them up in shocks, most cultivators tie the plants in small hand bundles of such a size as that each can be conveniently held in one hand. Before the shocks are formed, the leaves of the plants should be rapidly knocked off with a rough paddle or hooked stick.

Some suffer the plants to remain in these shocks until the plants are spread down to be rotted. Others, again, collect the shocks together as soon as they can command leisure, (and it is clearly best) and form them into stacks. A few farmers permit these stacks to remain over a whole year, before the plants are exposed to be rotted. I have frequently done it with advantage, and have at this time two crops in stalks. By remaining that period in stalks, the plants go through a sweat, or some other process that improves very much the appearance, and, I believe, the quality of the lint, and this improvement fully compensates the loss of time in bringing it to market. The lint has a soft texture and a lively hue, resembling water rotted hemp; and I once sold a box of it in the Baltimore market at the price of Russia hemp. In every other respect, the plants are treated as if they were not kept over a year.

The method of dew-rotting is that which is generally practised in Kentucky. The lint so spread is not so good for many purposes, and especially for rigging and ships, as when the plants have been rotted by immersion in water, or, as it is generally termed, water-rotted. The greater value, and consequently higher price, of the article, prepared in the latter way, has induced more and more of our farmers every year to adopt it; and, if that prejudice were subdued, which every American production unfortunately encounters, when it is first introduced and comes in competition with a rival European commodity, I think it probable that in a few years we should be able to dispense altogether with foreign hemp. The obstacles which prevent the general practice of water-rotting, are

* Would it not be well to soak the seed in water a few hours previous to sowing? We have found this to answer nearly as a good a purpose as rain after sowing, with all seeds with which we have tried it. The vegetation of mangel wurtzel is wonderfully accelerated by it.—[Ed. Am. Farmer.]

the want of water at the best season for the operation, which is the month of September; a repugnance to the change of an old habit, and a persuasion which has some foundation, that handling the plants after their submersion in water during that month is injurious to health. The first and last of these obstacles would be removed by water-rotting early in the winter, or in the spring. The only difference in the operation, performed at those seasons and in the month of September, would be, that the plants would have to remain longer in soak before they were sufficiently rotted.

The plants are usually spread down to be dew-rotted, from the middle of October to the middle of December. A farmer who has a large crop on hand, puts them down at different times for his convenience in handling and dressing them. Autumnal rotting is more apt to give the lint a dark and unsightly color than winter rotting. The best ground to expose the plants upon is meadow, or grass land, but they are not unfrequently spread over the same field on which they grew. The length of time they ought to remain exposed depends upon the degree of moisture and the temperature of the weather that prevail. In a very wet and warm spell, five or six weeks may be long enough. Whether they have been sufficiently rotted or not, is determined by experiment. A handful is taken and broken by the hand or applied to the brake, when it can be easily ascertained, by the facility with which the lint can be detached from the stalk, if it be properly rotted. If the plants remain on the ground too long, the fibres lose some of their strength, though a few days longer than necessary, in cold weather, will not do any injury. If they are taken up too soon, that is, before the lint can be easily separated from the woody part of the stalk, it is harsh, and the process of breaking is difficult and troublesome. Snow-rotting, that is, when the plants, being spread out, remain long enough to rot—which, however, requires a greater length of time—bleaches the lint, improves the quality, and makes it nearly as valuable as if it had been water-rotted.

After the operation of rotting is performed, the plants are again collected together, put in shocks or stacks, or which is still better, put under a shed or some covering. When it is designed to break and dress them immediately, they are frequently set up against some neighboring fence. The best period for breaking and dressing is in the month of February and March, and the best sort of weather, frosty nights and clear thawing days. The brake cannot be used advantageously in wet or moist weather. It is almost invariably used in this state out of doors and without any cover, and to assist its operation, the laborer often makes a large fire near it, which serves the double purpose of drying the plants and warming himself. It could not be used in damp weather in a house without a kiln or some other means of drying the stalks.

The brake in general use is the same hand brake which was originally introduced, and has been always employed here, resembling, though longer than the common flax brake. It is so well known as to render a particular description of it, perhaps, unnecessary. It is a rough contrivance, set upon two legs, about two and a half feet high. The brake consists of two jaws with slats in each, the lower jaw fixed and immoveable, and the upper one moveable, so that it may be lifted up by means of a handle inserted into a head or block at the front end of it. The lower jaw has three slats or teeth made of tough white oak, and the upper two arranged approaching to about two inches in front, and in such manner that the slats of the upper jaw play between those of the lower. These slats are about six or seven feet in length, six inches in depth, and about two inches in thickness in their lower edges; they are placed edgeways, rounded a little on their upper edges, which are sharper than those below. The laborer takes his stand by the side of the brake, and grasping in his left hand as many of the stalks as he can conveniently hold, with his right hand he seizes the handle in the head of the upper jaw, which he lifts, and throwing the handful of stalks between the jaws, repeatedly strikes them by lifting and throwing down the upper jaw. These successive strokes break the woody or reedy part of the stalks into small pieces or shoes, which fall off during the process. He assists their disengagement by striking the handful against a stake, or with a small wooden paddle, until the lint or bark is entirely clean, and completely separated from the woody particles.

After the above operation is performed, the hemp may be scutched to soften it, and to strengthen the threads. That process, however, is not thought to be profitable, and is not therefore generally performed by the grower, but is left to the manufacturer, as well as that of beating and heckling it. Scutching is done by the laborer taking in his left hand a handful of the lint, and grasping it firmly, then laying the middle of it upon a semi-circular notch of a perpendicular board of the scutching frame, and striking with the edge of the scutch that part of the lint which hangs down on the board. After giving it repeated strokes, he shakes the handful of lint, replaces it on a notch, and continues to strike and turn all parts of it, until it is sufficiently cleansed, and the fibres appear to be even and straight.

The usual daily task of an able-bodied hand at the brake is eighty pounds weight, but there is a great difference not only in the state of the weather, and the condition of the stalks, produced by the greater or less degree in which they have been rotted, but in the dexterity with which the brake is employed. Some hands have been known to break from 150 to 200 pounds per day The laborer ties up in one common bundle the work of one day, and in this state it is taken to market and sold. From what has been mentioned, it may be inferred, as the fact is, that the hemp of some growers is in a much better condition than that of others. When it has been carelessly handled, or not sufficiently cleansed, a deduction is made from the price by the purchaser. It is chiefly bought in our villages, and manufactured into cotton bagging, bales, and other kinds of untarred cordage. The price is not uniform. The extremes have been as low as three, and as high as eight dollars, for the long hundred—the customary mode of selling it. The most general price during a term of many years has been from four to five dollars. At five dollars it compensates well the labor of the grower, and is considered more profitable than any thing else the farmer has cultivated.

The most heavy labor in the culture of hemp is pulling or cutting it when ripe, and breaking it when rotted. This labor can easily be performed by men. Various attempts have been made to improve the process of breaking, which is the severest work in the preparation of hemp. A newly invented machine was erected for that purpose on my farm six or eight years ago, to dress hemp by dispensing with rotting altogether, similar in structure to one which was exhibited about the same time at Columbus, during the sitting of the Ohio Legislature. It was worked by horse power, and detached the lint tolerably well, producing a very fine looking article, equalling in appearance Russia hemp. A ton of it was sold to the navy department, which was manufactured into rigging for the ship of the line the North Carolina, prior to her making a voyage of three years to the Mediterranean. Upon her return, the cordage was examined and analyzed; and although its exterior looked very well, it was found, on opening it, to be decayed and affected somewhat like the dry rot in wood. I considered the experiment decisive; and it is now believed that the process of water or dew-rotting is absolutely necessary, either before or after the hemp has been to the brake. There is a sappy or glutinous property of which it should be divested, and that is the only process that has been hitherto generally and successfully employed to divest it.

An ingenious and enterprising gentleman in the neighborhood of Lexington has been, ever since the erection of the above mentioned machine, trying various experiments, by altering and improving it, to produce one more perfect, which might be beneficially employed on rotted hemp, to diminish the labors of the brake. He mentioned the other day, that all of them had failed; that he had returned to the old hand brake, and that he was convinced that it answered the purpose better than any substitute with which he was acquainted. I observe Mr. H. L. Barnum has recently advertised a machine, which he has constructed for breaking and dressing hemp and flax, which can be procured at the establishment of Mr. Smith, in Cincinnati. I most cordially wish him success, but the number of failures which I have witnessed, during a period of thirty years, in the attempts to supersede manual labor by the substitution of that of machines, induces me to believe that it will be long before this desideratum is obtained.

The quantity of net hemp produced to the acre is from 600 to 1000 weight, varying according to the fertility and preparation of the soil, and the state of the season. It is said that the quantity which any field will produce, may be anticipated by the average height of the plants throughout the field. Thus, if the plants will average eight feet in height, the acre will yield 800 weight of hemp, each foot in height corresponding to a hundred weight of the lint.

Hemp exhausts the soil slowly, if at all. An old and successful cultivator told me that he had taken thirteen or fourteen successive crops from the same field, and that the last was the best. That was probably, however, owing to a concurrence of favorable circumstances. Nothing cleanses and prepares the earth better for other crops (especially for small grain or grasses) than hemp. It eradicates all weeds, and when it is taken off, leaves the field not only clean, but smooth and even.

The rich lands of Ohio, Indiana, and Illinois, are, I have no doubt, generally well adapted to the cultivation of this valuable plant; and those States enjoy some advantages for the cultivation of it which this does not possess. Their streams do not dry up as much as ours, and they consequently employ better than we can, the agency of water, in the preparation of it. Their projected canals, when completed, will admit of its being carried to the Atlantic capitals at less expense in the transportation than we can send it. On the other hand, the unfortunate state of slavery among us gives us, at present, probably a more certain command of labor than those States have. I am, &c. HENRY CLAY.

PRESERVED YEAST.—The Editor of the American Farmer gives the following directions for making a yeast which he uses in his own family. Yeast in the form of cakes is common in this section of the Union.

Take a good handful of fresh hops and boil them in a quart of water till they settle to the bottom of the kettle; strain the liquor after cooling, upon a pint of good wheat flour in a stone jar, and stir it well, breaking all the lumps, and making a thin batter. When the hand can be borne in it without pain, put in half a pint of common baker's yeast, or any other yeast that is fresh and good, except brewers' yeast, which will not do, cover the jar and set it away to rise. In eight or ten hours this will rise and become such as is used by the city bakers. It should be allowed to rise as high in the jar as it will go, (for this purpose the jar should at first be only half full,) and begin to fall; then take good corn meal and stir into it, till it becomes quite stiff. This dough must now be rolled out on a table into a cake a quarter of an inch thick, cut into pieces two or three inches square, and placed on boards in a dry airy room, and turned over once a day till the cakes become thoroughly dried, when they must be put away in a perfectly dry place—in a common linen bag is the best. When wanted for use, one of the cakes is to be taken for each loaf of a moderate size intended to be made, put into a bowl or other vessel, and a gill of warm water for each cake is to be poured on it; as soon as it dissolves, which will be in half an hour or so, stir it up, and put it into the flour in the usual way of using yeast.

[*From the American Railroad Journal, &c.*]

RIDAU CANAL—The completion of the Ridau Canal, connecting Montreal with the lower extremity of Lake Ontario, is another signal mark of the advance of mechanical science on this continent; and, as forming an important link in the great chain of internal communication between Halifax and the Gulf of Mexico, is sufficiently an object of common interest to render a brief account of this magnificent undertaking not altogether unacceptable to the readers of your valuable Journal.

The difficulties which the British had to contend against during the late war with this country, in the transportation of stores, ammunition, and such articles as are requisite for carrying on an active campaign to advantage, first suggested the idea of a water communication between the provinces; and although at this early period the practicability of the undertaking bore rather a questionable aspect, its importance had been rendered so palpable as still to induce a number of distinguished individuals to direct their attention to the adoption of such measures as, with the aid of the mother country, would enable them to realize their wishes and place them on a more favorable footing in the event of a recurrence of hostile operations. That the project met with the consideration its importance merited from the British parliament, and that its political advantages were duly appreciated by that body, is mainly ascribable its happy and speedy termination:—indeed, without the pecuniary aid thence anticipated, the exertions of the Canadians, however enterprizing, in a work costing rising of six hundred thousand pounds, could have availed nothing, and must necessarily have been deferred to an indefinite period; and thus have left a vast tract of arable land in a wild state of uncultivation,

For, independent of the advantages resulting from this connexion in a political point of view, it claims additional interest for the facilities it holds forth both to the agricultural and commercial communities—by developing the natural resources of a large surface of country heretofore in a state of uncivilization—by promoting and giving a new spring to the trade of the provinces—and by affording means of employment to the thousands of emigrants that are almost daily arriving from the other side of the Atlantic. On this last account, it will indeed be an inestimable blessing to the mother country; not only in easing them of a large surplus population, but also in yielding a resource, from which, with ordinary exertion, the enterprise of the emigrant may extract its own reward and speedily place him on a comfortable and independent footing in the land of his adoption.

With these preliminary observations, and before following the line along its route, it will be necessary to delay a few moments to notice the works at Bytown and its vicinity, as far as the rapids on Ridau river, which are by far the most extensive and interesting on the whole line of the Canal. Its discharge into the Ottowa at this place, which is the lower extremity of the Canal, is marked by an extensive cove on the right bank of that river, in a gulley existing between the falls of the Chaudiere and Ridau. This point appears to have been reserved by nature for the purpose to which it is adapted; and, indeed, bears every characteristic, both as to its banks and valley, of having been formerly the bed of the Ridau. The elevation of the mouth of the Canal above the level of the sea is estimated at one hundred and ten feet, while it is considered two hundred and eighty-three below the summit level on "Ridau Lake," and one hundred and twenty-nine below the level of Lake Ontario, at Kingston. Its distance from Montreal is computed at one hundred and twenty miles, and from Kingston by water one hundred and sixty, and by land one hundred and thirty.

Directly above the mouth of the Canal, may be seen the beautiful and magnificent cataract of the Chaudiere. It consists of a series of falls, more or less extensive, and amounting in all to thirty-one and a half feet perpendicular. But that which stands most prominent to view, and gives an appearance of grandeur to the whole, is at the broadest channel of the river, and known by the name of the *Grande Chaudiere*, or *Big Kettle*, from the peculiar formation of the cauldron into which the waters fall. This formation consists of a hard laminated lime-stone, in horizontal strata, and worn into its present horse-shoe shape by the constant abrasion of the rolling water over its surface. The depth of the cauldron is said to be over three hundred feet—at least, a sounding line of that length could not be made to touch bottom.

Next in interest to these may be mentioned the Cataract of the Ridau. It is situated at the mouth of the river, where its dark green waters falling from an eminence of thirty-seven feet, in a single unbroken sheet, are not unlike the curtain from which the name is derived. They are neither so grand nor so extensive as those of the Chaudiere; but still are not wanting in natural beauties—indeed, the surrounding country is highly picturesque. The river finds its source in the Ridau Lake, eighty-five miles from the Ottowa, but is not occupied as the bed of the Canal till about six miles above its entrance, it having been found more expedient to make use of the natural valley and bay already alluded to.

At this point it became necessary, in consequence of the rugged and precipitate nature of the banks of the Ottowa, to overcome the difference of level between the river and canal, by the construction of a series of locks, eight in number, and each rising ten feet, giving an aggregate of eighty feet perpendicular rise; and to guard against the heavy floods, occasioned by the melting of the deep snows in the regions towards the northwest, a height of twenty-four feet, with a corresponding increase of thickness, was given to the wings and piers of the lowest one. At the head of the first four locks, which are contiguous, a basin is constructed of sufficient capacity to contain several boats, and intended at the same time to act as a reservoir to meet the constant and heavy expenditure of water necessarily attendant thereon. Directly succeeding this basin are the remaining four locks, likewise contiguous; and beyond a like basin is constructed for like purposes, over which a fine arch of cut stone is thrown to afford a medium of communication between Upper and Lower Bytown. These locks are one hundred and thirty-four feet in length and thirty-three feet in breadth, constructed in a liberal workmanlike manner, and present an elegant and commanding appearance. The estimated cost was £45,700.

The reason for the adoption of this large scale for the lock chambers was the necessity of opening a navigation for the admission of steamboats. About seventy miles of the route passes through either extensive lakes with bold and rocky shores, or soft swampy meadows, where good foundations were unattainable, save at great additional expense. Hence it became necessary to do away with the ordinary towing-path, and enlarge the Canal to a surface of forty-eight feet, with a depth of five throughout, to admit the passage of steamboats from one extremity to the other.

The towns of Upper and Lower By, so named after the commandant of engineers, Lieut. Col. John By, under whose superintendance the works were constructed, have already assumed a character and importance which, when their brief existence is taken in consideration, is truly marvellous. The towns already contain, in addition to their numerous dwelling-houses, two large store-houses for the use of the Ordnance and Commissariat Departments; three substantial buildings for the accommodation of the troops, erected on the highest eminence, so as to command both the river and canal; and at a short distance an excellent military hospital.

In the vicinity may also be seen, in the "Union Bridge," the execution of one of the most daring plans ever conceived. It connects Upper with Lower Canada, and is thrown directly over the falls of the Chaudiere, taking advantage of the numerous rocky islands embraced by the diverging branches of the river at this place; and forming altogether a most magnificent and imposing specimen of civil architecture. The bridge is composed of six distinct arches, two of stone and four of wood, stretching from island to island with various spans, as circumstances required; and forming an aggregate length of bridge-way of seven hundred and eighty-one feet. The arches across the *Grande Chaudiere* and the *Chanail Ecarte*, or *Suie-Carty* as the boatmen have it, in consequence of the number of rafts wrecked in the channel, are by far the most interesting. These are both wooden truss-bridges—the first with a span of two hundred and ten feet, and the second with one of a hundred and sixty. The manner in which these huge masses of timber were raised was to attach firmly to the rocks, on either side of the arch, strong and heavy chains; upon which chains, stretching across the stream, rested the string-pieces of the bridge; and at each point where the rest was effected, strong spars were lashed to hold all steady. From these spars proceeded strong ropes, placed on crabs, and which, when heaved, relieved the chains from bearing the extreme weight of the string pieces of the bridge between the abutments and spars, thus shortening the span and lessening the strain. In the centre of the stream a scow, securely anchored, contained a scaffolding, which was removed as soon as the three string-pieces were bolted and secured by a sufficient number of braces to prevent their sagging.

Now, taking leave of Bytown and its vicinity, and proceeding along the line until it strikes the river, little of interest occurs, saving a singular break in an interesting ridge of land, extending for several miles at an average depth of about thirty-five feet. It is known under the name of the "Notch in the Mountain," and affords an opportune passage for the canal, which would otherwise, in order to pass it, have had to encounter a heavy excavation.

At the point where the canal enters the channel of the river are found strong rapids, confined on one side by a high clay bank, and on the other by a rocky shore. To overcome the fall existing here, which is about thirty feet, it was necessary to drown the rapids by the erection of a large dam, and surmount the elevation by three ten-feet locks, raising the walls of the upper one three feet higher than those of the other, so as to act as a guard against the freshets. This dam backs the water as far as the "Black Rapids"—to which point, and indeed thence all the way to its source in "Ridau Lake," the channel of the river continues to be used. The Ridau, like other rivers in Canada, is a combination of rapids and long sheets of still water, alternately intervening, and to overcome which it is ever necessary to have recourse to locks and dams. There are fourteen rapids between Bytown and Ridau Lake, which are destroyed by as many dams, and twenty locks of various lifts, amounting in all to two hundred and eighty-three feet, and all constructed in a handsome, permanent manner, doing credit alike to the skill of the architect and the liberality of his employers.

The "Ridau Lake," which is the proper summit of the canal, is a beautiful expanse of clear green water, thirty miles long and twelve broad, surrounded on all sides by bold, rocky, and precipitous banks. The only interruptions which the navigation encounters across this lake are at "Oliver's Ferry" and "Ridau Narrows," where considerable extra expense was incurred to overcome the currents there created by the contraction of the waters.

Continuing the use of the Ridau waters for the space of forty-five miles on the summit level of the route, its course finally bends towards the "Cataraqui River," which has an outlet in Lake Ontario near Kingston. An excavation of ten feet for the distance of a mile and a half across the isthmus, existing between "Ridau" and "Mud" lakes, was necessary to effect this

object. The latter lake is three and a half feet below the level of the Ridau, and has a length of twelve miles, with an average breadth of ten, studded all over with innumerable small islands, which give it quite a picturesque appearance. It is intended eventually to raise the waters to the level of the summit lake.

Leaving this lake the canal enters the "Indian," and thence, instead of making the long detour of the river, encounters a cut of six feet, by which, in a more direct line, the distance is considerably shortened. Thence following the course of the "Cataraqui" to within fifty-five miles of Kingston, a dam is met with, backing the water as far as the last mentioned lake.—The rapids connecting this with "Davis' Lake," on the right side of the river, are surmounted by a dam stretching across just above the mill-dam now in use. This dam backs the water through a channel on the left side of a small island in the centre of the river, into the first lock, where the canal enters; and thence, at, say, eight hundred feet lower down the same rapids, a second dam on the right side of another island is erected, with a separate lock on the left channel, again, as before, discharging the canal into the river. By these works the rapids, which before were highly dangerous and difficult of accommodation, are entirely destroyed.

Again, following the course of the "Cataraqui River" for the further distance of eight miles, and successively passing "Davis" and "Opinicon" lakes, together with their intervening rapids, surmounted as usual by a dam and lock, you arrive at a point called "Jones' Falls," thirty-five miles from Kingston. These falls descend sixty-one feet within the mile, and connect "Opinicon Lake" with "Cranberry Marsh," where the river holds its course through a narrow rocky ravine. This fall is overcome by a dam and six locks. Thence, passing three more smaller rapids, with their customary works, the line at length reaches "Kingston Mills," where the Cataraqui empties itself into Kingston Bay, a part of Lake Ontario, and five miles distant from Kingston. This is the upper extremity of the canal on the Canada side, and is terminated at its junction with Lake Ontario by the erection of four locks of nine feet each. These locks are built in a permanent manner, and, like the others, are highly ornamental as well as creditable to the work.

This finishes a very general account of a work that, in its bearing, must have a highly important and beneficial effect on the future prosperity of our Canadian neighbors. It gives them access, through the medium of the lakes and the Welland Canal, to the whole trade of our western country; and, as a consequence in so doing, will afford to our enterprising fellow-citizens in that direction a wider field of action, and a new resource for the disposal of their agricultural productions. For although, as before observed, the end of this work is entirely political, and in another war would much facilitate the operations of our enemies in that quarter, yet such an event must necessarily be too remote, where every thing is to be lost and nothing gained on their part, to encourage for a moment a single idea of apprehension on ours. The work can, therefore, only be regarded by us in its most favorable light, as perfecting the longest line of internal communication in the world, that from the Gulf of St. Lawrence to the Gulf of Mexico; and as disseminating, in its progress over the thousands of miles of territory through which it courses, nothing save wealth, peace, and happiness. F.

New-York, February 2d, 1833.

Troy and Bennington M'Adam or Railroad.—We even rejoiced, says the Troy Press, to receive an account for publication in our paper to-day of a meeting of the persons who have the interests of this enterprise in charge, containing resolutions of an intention to prosecute the undertaking immediately. We are glad to be informed of this movement, and have no doubt the sentiment will be responded to by the entire community. The resolutions, which have been unavoidably crowded out of this paper, contemplate an application for the alteration of the charter so as to admit of two avenues to the city instead of one. It is intended in the first place to build on the plan of M'Adam.

Military Roads.—Quarter-Master General Th. Jessup, in his Report to the Secretary of War, states that the difficulties experienced in the late operations against the Indians, in the movement of the troops, and the transportation of supplies, prove the necessity of several good roads to intersect the extensive territory lying between the frontier settlements of Indiana, Illinois and Michigan, and the Fox and Wisconsin rivers; and he recommends, as a most important measure for the protection and defence of the north-western frontiers, that roads be authorized from Chicago to Galena; from Chicago to Fort Winnebago, and from the latter to Galena, as well as from some suitable points on the Illinois river to Chicago, and to intersect the road thence to Galena. The roads here proposed, if constructed, would be of very great importance to our northern inhabitants for other than military purposes.—[Sang. Jour.]

[*From the Detroit Courier, Jan. 9.*]

Michigan.—Extracts from the Report of the Chief Engineer:

Road from Detroit to Chicago, Michigan.—The contracts entered into last year for the construction of 27 miles of this road, beginning at the 105th, and terminating at the 132d mile from Detroit, including the erection of bridges over Cold Water River, Flag Creek, Swan Creek, and Prairie River, have, in most instances, been complied with; and the work provided for by the whole of the contracts would, in all probability, have been executed, had not many of the contractors been called upon, in the early part of the present year, to march towards the seat of the late Indian disturbances. These contractors are at present, however, actively engaged in fulfilling the terms of their contracts, and no doubts are entertained of the completion of their engagements within the present fall. An estimate of the funds necessary to complete this road as far as the northern boundary line of Indiana has been submitted.

Road from La Plaissance Bay to the Detroit and Chicago Road, Michigan.—The Commissioners appointed under the act of Congress of 4th July last, which provides for the location of this road, having accomplished the object of their commission, and furnished their report, accompanied by a plat, field notes, and an estimate of constructing this road, an officer has been directed to superintend its construction, with instructions to place that portion of it included between the bay and Tecumseh under contract, with as little loss of time as possible. The accounts rendered by the commissioners, as well as their report, show that the amount of expenditures on account of the location exceeds the sum appropriated for that object, by $608 76, which excess has been advanced by the commissioners under the expectation that Congress will relieve them by an additional appropriation of that amount. As an examination of the accounts shows that no unnecessary expenses were incurred, this amount is accordingly embraced in the estimate already furnished.

Road from Detroit to Saganaw, Michigan.—Contracts have been entered into for the construction of this road as far as the fifty-seventh mile from Detroit, including the erection of bridges over the Thread and the Flint rivers, the former on the fifty-eighth, and the latter on the sixtieth mile. An estimate for the continuation of this road has been submitted.

Road from Detroit to the mouth of Grand River.—The Commissioners appointed under the act of Congress of the 4th July last, in reference to this road, are now engaged in making its location.

Road from Detroit to Fort Gratiot, Michigan.—The location of this road having been changed by virtue of the authority granted in the act of Congress of 3d July last, arrangements have been made for continuing its construction, by contract, as far as Black river, which is just below Fort Gratiot. The funds available for this road are sufficient for its completion, which will be accomplished in the course of the coming year.

[*From the Journal of the Franklin Institute.*]

AMERICAN PATENT.

For an Improvement in the Silk Reel; Charles G. Green, Windsor, Windsor county, Vermont, May 30.

The improvement here described is intended to distribute the silk upon the reel with perfect regularity, and thus to prevent the occurrence of the defect which is known by the name of glazing; and consequently to produce silk of a better quality than can be obtained by the common reel. To effect this purpose the reel is made to traverse backward and forward with perfect regularity; this is done by lengthening out the gudgeons of the shaft of the reel, so that they shall each form cylindrical rods of the full length of the reel itself. These turn in boxes upon the frame of the reel, having a crank upon one of them for that purpose.

These rods may be about an inch in diameter, and upon one of them two channels are cut from end to end, one of these forms a right, and the other a left handed screw. A guide piece in one of the boxes, acting alternately in these grooves, causes the reel to traverse backward and forward. This is the part which forms the subject of the patent, it being the only one in which this reel differs essentially from others.

As there are two cylindrical rods, we should suppose that it would be better to have the right hand screw on one of them, and the left hand screw in the other; as in the machine described, these grooves cut each other in their crossing, at every turn. The principle of action would remain the same, although in the case suggested each box must have its guide piece, which could be engaged and disengaged by very simple gearing.

Receipts and Expenditures since the Adoption of the Constitution.—We copy the following statement of the aggregate amount of the receipts and expenditures since the adoption of the federal constitution, from a report made by the Secretary of the Treasury, in pursuance of a resolution of the Senate of the United States.

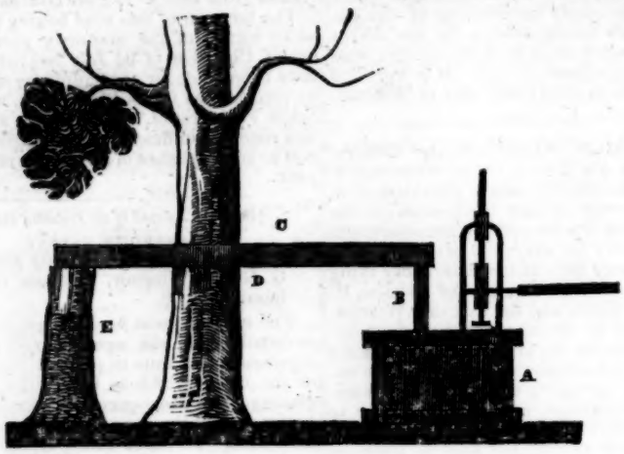
A statement, showing the whole amount of the receipts and expenditures of the government, from the adoption of the federal constitution to the 31st December, 1831, under separate heads, exhibiting the aggregate expenditure, exclusive of the public debt:

RECEIPTS.

Customs,	$566,443,830 05
Internal Revenue,	22,223,630 16
Direct Tax,	12,730,097 47
Postage	1,090,978 66
Public Lands,	38,003,869 89
Loans and Treasury Notes,	156,181,578 57
Dividends and Sales of Bank Stock,	10,393,506 30
Miscellaneous,	5,329,616 17
Total,	$812,397,107 27

EXPENDITURES.

Civil List,	$33,557,289 57
Foreign Intercourse,	23,818,401 26
Miscellaneous,	29,748,500 47
Military services, including fortifications, &c.,	185,092,608 33
Revolutionary Pensions,	16,241,160 64
Other Pensions,	6,583,006 41
Indian Department,	12,060,768 41
Naval Establishment,	108,747,562 94
Aggregate, exclusive of the Public Debt,	$417,344,298 06



Application of Bramah's Pump to the Eradication of Stumps of Trees. [From the London Mechanics' Magazine.]

Sir,—Your correspondent, Mr. Hounds (p. 98,) inquires for a machine to render the clearing of the woods more easy to the emigrant, and seems to think something in the shape of a circular saw most likely to supply the desideratum. Now, sir, I have always understood that the axe, in the hands of a skilful woodsman, is as efficient an instrument as need be desired for the mere clearing, but that it is the stumping, or getting up the roots, which is the most difficult part of the business, and for which some new process is the most imperiously required. The usual way, I believe, is to leave the stumps in the ground until they become rotten in the course of nature, which takes several years, during which the settler has to plough round them. Those who have capital sufficient make use of machinery, set in motion by horses or oxen, to pull out the roots at once; but this process is of course out of the reach of the poorer classes of emigrants, who have very little money to spare for implements, and none for live stock. To this class, perhaps, a machine like that represented in the prefixed figure might prove of essential service. Its cost would not be very great, and its application would be particularly easy :—

A is a Bramah's pump, from its great power and simplicity the best moving force for the purpose.

B the solid piston, on which is placed one end of

C, a strong beam of timber, fitting in

D, a notch cut in the tree to be felled. The other end rests on

E, the stump of a tree, or other convenient block, near the tree operated upon. When the pump is worked, the beam C will of course be raised, and the tree must necessarily rise with it. It might perhaps be requisite to dig a little round the roots, and to cut some of the principal ones, but of course the power exerted might be increased to an immense extent, by employing a longer beam, so as to gain a very long leverage. If not used to fell, or rather to raise a growing tree by the roots, this machine might be of great service in extirpating the stumps, by means of an arrangement similar to that employed in drawing the piles of Waterloo Bridge, as described by Mr. Davy, in vol 13, page 184, of the Mechanics' Magazine.

Another correspondent, P. M., (also on page 98,) has proposed a plan for transmitting ready-made cottages to Australia. The usefulness of this may be doubted, especially when it is recollected that a wooden house, which was sent out to New South Wales at the first establishment of the colony to serve as a hospital, took *several months* in erecting at its place of destination, although it had been put together in London in a few hours! Besides, it will never pay to carry a ready-made house *more* than 10,000 miles. Yours, &c., F. H.

June 8, 1832.

EATON'S MANUAL OF BOTANY: SIXTH EDITION.—In answer to the numerous inquiries of the botanising public, we inform them that the sixth edition of the above work is now in press by Mr. Oliver Steele, bookseller, of this city, and will soon be for sale in all the principal bookstores.

In this edition the genera are arranged under the Linnæan Artificial System, and then repeated under the natural method, with the improvements of Brown, De Candalle, Lindley, and others.

The etymologies and accentuation of all the genera are given, and the plants of the North-western Lakes, of the Rocky Mountains, &c. are added from Hooker, Douglass, Drummond, Golsie, Richardson, and others, and the new species of De Candalle, &c. This edition will therefore be a full Flora of North America.—[Albany Argus.]

HUMAN STRENGTH.—One of the most remarkable and inexplicable experiments relative to the strength of the human frame, which you have yourself seen and admired, is that in which a heavy man is raised with the greatest facility, when he is lifted up the instant that his own lungs and those of the persons who raise him are inflated with air. This experiment was, I believe, the first shewn in England, a few years ago, by Major H., who saw it performed in a large party at Venice, under the direction of an officer in the American Navy. As Maj. H. performed it more than once in my presence, I shall describe, as nearly as possible, the method which he prescribed. The heaviest person in the party lies down on two chairs, his legs being supported by the one, and his back by the other. Four persons, one at each leg, and one at each shoulder, then try to raise him, and they find his dead weight to be very great from the difficulty they find in supporting him. When he is placed in the chair, each of the four persons take hold of the body as before, and the person to be lifted gives two signals by clapping his hands. At the first signal he himself and the four lifters begin to draw a long and full breath: and when the inhalation is completed, or the lungs filled, the second signal is given for raising the person from the chair. To his own surprise and that of his bearers, he rises with the greatest facility, as if he were no heavier than a feather. On several occasions I have observed that when one of the bearers performs his part ill, by making the inhalation out of time, the part of the body which he tries to raise, is left, as it were, behind. As you have often seen this experiment, and have performed the part both of the load and the bearer, you can testify how remarkable the effects appear to all parties, and how complete is the conviction either that the load has been lightened or the bearer strengthened by the prescribed process. At Venice the experiment was performed in a much more imposing manner. The heaviest man in the party was raised and sustained upon the points of the fore-fingers of six persons. Maj. H. declared that the experiment would not succeed if the person lifted were placed upon a board. He conceived it necessary that the bearers should communicate directly with the body to be raised. I have not had an opportunity of making any experiments relative to these curious facts; but whether the general effect is an illusion, or the result of known or of new principles, the subject merits a careful investigation.—[Sir D. Brewster.]

SWEET APPLE PUDDING.—Take one pint of scalded milk, half a pint of Indian meal, a tea cupful of molasses, a tea spoonful of salt, and six sweet apples cut into small pieces—should be baked not less than three hours—the apples will afford an excellent rich jelly. This is truely one of the most luxurious yet simple Yankee puddings made.

THE SNOW-FLAKE—BY MISS H. F. GOULD.

"Now, if I fall, will it be my lot
To be cast in some lone, and lonely spot,
To melt, and to sink, unseen, or forgot?
And there will my course be ended?"
'Twas this a feathery Snow-Flake said,
As down through measureless space it strayed,
Or, as half by dalliance, half afraid,
It seemed in mid air suspended.

"Oh! no," said the Earth, "thou shalt not lie
Neglected and lone on my lap to die,
Thou pure and delicate child of the sky!
For, thou wilt be safe in my keeping.
But then, I must give thee a lovelier form—
Thou wilt not be part of the wintry storm,
But revive, when the sunbeams are yellow and warm,
And the flowers from my bosom are peeping!

"And then thou shalt have thy choice, to be
Restored in the lily that decks the lea,
In the jessamine-bloom, the annemone,
Or aught of thy spotless whiteness:—
To melt, and be cast in a glittering bead,
With the pearls, that the night scatters over the mead,
In the cup where the bee and the fire-fly feed,
Regaining thy dazzling brightness."

"Then I will drop," said the trusting Flake;
"But bear it in mind, that the choice I make
Is not in the flowers, nor the dew to wake;
Nor the mist, that shall pass with the morning.
For, things of thyself, they expire with thee;
But those that are lent from on high, like me,
They rise and will live, from the dust set free,
To the regions above returning."

NEW-YORK FARMER.

MARCH 1, 1833.

TO CORRESPONDENTS AND READERS.—We have received B. P., and will insert it in our next—also R. M. W., S., and B. We welcome H., and hope to hear from him often. The acceptable favor of A. W. was not received until the "original" department of our paper was closed.

We would call attention to the article, Cause of Farmers, page 67, and also to the facts in relation to the benefit of Agricultural Societies under the head of Agricultural Seminaries, page 73. The Rise and Progress of Agriculture in Scotland, page 70, is a good article; and we should be pleased to have frequent favors from the same source. Mr. Bridgeman's article, page 72, contains directions to be relied on.

LEGISLATIVE COMMITTEES.—The practice of appointing, at the commencement of the annual sessions of our State and General Legislatures, a committee on each of the most important subjects coming within the purview of legislation, is a good one. These committees might, in our apprehension, be of far greater service to the country if they were required to give full annual reports of the progress and condition of the several great interests for the advancement of which they are appointed. What portion of the members of the New-York Legislature, for instance, fully know the condition and feel the wants of the agriculture of this great agricultural State? Scarcely one member. What portion of the people have enlightened views of the additional

wealth and influence which New-York may acquire by the aid of legislation and the diffusion of information? Comparatively a very few. The agricultural community are almost wholly ignorant of the statistics of the agriculture of New-York. They have comparatively no resources to obtain the desired information. The number of sheep, horses, cattle, and hogs, the quantity of grain raised, and numerous other subjects necessary to afford information to the farmer on public affairs, are either entirely unknown, or not brought to the notice of the inhabitants of the State.

On a future occasion we intend to give our thoughts more at large on this subject.

American Silk.—Through Dr. Pascalis we have been presented, from D. C. Wallace, Esq. Secretary of the Hamilton County Agricultural Society, of Ohio, specimens of American silk, of various colors. The thread is even and fine, and the colors beautiful. It was manufactured by Mrs. Hannah, of Wayne county, Indiana, and obtained the premium of the Hamilton Agricultural Society. The worms were fed on the leaves of the native mulberry. Mrs. H. is deserving of credit, not only for having produced a handsome specimen of silk, but should be considered as a public benefactor for the example she has set to our fair countrywomen.

Piedmontese Reel.—The American Institute of this city has obtained one of the celebrated Piedmontese silk reels. It is in the possession of Dr. Pascalis, and in a short time will be exhibited in reeling American cocoons.

Barley from Constantinople.—From the New-York Daily Advertiser of the 23d inst. we extract the following:

By referring to an article on grain, in the Review of the Market, it will be seen that nine thousand bushels of barley have reached here from Constantinople, being the production of Asia Minor. This, we believe, is the first parcel that has ever arrived here; the quality appears to be good, in a sound state, plump and bright. We are told it will pay the shippers at the very low price barley is selling at here. It would be a most extraordinary fact, if the opening of commercial trade with the Sublime Porte should be the cause of introducing into this country barley and wheat, which are raised in abundance in that country. Up to the present period grain, flour, &c. have been among the most important articles of export from this country.

The Young Gardener's Assistant.—The Fourth Edition of this popular work is considerably enlarged and improved, is now in press, and will be published early in March. We congratulate Mr. Bridgeman on the success that attends his useful book. An edition of 1000 copies has been published three or four times within the last five years. It is a rare instance of popularity, and is, we presume, almost the only work on rural subjects recently published that has afforded any profit.

Open and close Barns for Hay.—A writer in the Kennebec Farmer states, that he has practiced for three years the curing and packing of hay in an open old barn, with wide cracks between the boards, and for four years in one made tight by matching the boards with a plough and tongue, and painting the tongues of every board when nailed—that his hay in the tight barn has always been the brightest, the best, more fret from smoke and mould, and less affected by fermentation. He used salt in packing his hay, particularly that which has been exposed to storms in curing. That which had been slightly damaged and salted was relished better by the cattle than that which was well cured without salt.

Cucumbers in Tubs.—Those who have not the conveniences of ground for early cucumbers, can supply the deficiency. Take a tight box or a tub, cover the bottom with small stones, pour in water to the height of the stones, or even higher, and then fill the box with rich soil, into which plant the seeds. The tub may be kept in a warm place until all danger of frost is past. If the soil is very good, one or two tubs are sufficient for almost any family.

Mixing of Vegetables by the Roots.—*Mr. Fleet:* You may inform Mr. Thomas Bridgeman that I believe every word he says in favor of the 'Old Man.' I simply inquired if Mr. B. was certain that the carrot seeds were not mixed when in flower. What I stated in my former communication, I humbly conceive, even after reading Mr. Bridgeman's statement, to amount to a demonstration that vegetables do not mix by the roots. R. M. W.

Agricultural Societies.—*To the Farmers of Columbia County.*

We are much pleased to see the members of the general committee of the State Agricultural Society for the county of Columbia step forward and address their fellow citizens zealously and ably. They set an example worthy of being imitated in all the counties.

Last winter a number of gentlemen from about one half the counties in this State met at Albany, and formed themselves into a State Agricultural and Horticultural Society.

They adopted a constitution, in which they specially recognize the principle that County Societies, for the promotion of the objects they have in view, will be their most efficient aids. For the purpose of calling the attention of all those interested to the necessity and importance of forming Societies in every county in this State, they appointed a general committee in each county, whose number was to equal their members of Assembly, and whose special duty it was made to endeavor to organize a Society in the several counties for which they were named. We, the undersigned, were appointed that committee for the county of Columbia.

In compliance with the duty which thus devolves upon us, under the direction of the State Society, we would now call the attention of our farmers to this most interesting subject, and urge them to the formation of an Auxiliary County Society. We trust it is not expected that we should go into an elaborate argument, to show the advantages that are to result to us from this organization. It is enough that it is considered one of the means of improvement, and as such we commend it to your favorable notice. We will observe, that the wealth of our county consists in her lands, her stock, her hydraulic privileges, the improvements upon them, and the aid derived to all these from her manufacturers and mechanics. Surely then, we ought to draw upon the intelligence of all that engage in these different pursuits, to give increased value to these peculiar advantages.

In the almost unaided and unsystematic manner in which agriculture has been conducted for the last twenty years, still it has made some advancement; and who knows what impulse it may have received from the Society that was formerly in existence here? Latterly, however, the efforts of our farmers have been single-handed; and if, under many discouragements, they have still done something towards the advancement of their art, an united effort promises to do much more.

Shall we make that effort? for no farmer among us will pretend that his farm is incapable of farther improvement. If there is any such, we would ask him, Is your house built in the best, most accommodating, and cheapest manner for your means; and that not only for yourself, but for posterity? Have your quarries of stone and groves of timber contributed their just proportions towards it, without a waste of either? Are your barns and yards exactly such as they should be, safely to house your produce and carefully confine your stock? Are your fences made in the right manner, and of the best materials, both for durability and cheapness? Can no farther improvements be made in all that gives value to your stock of horses, cattle, sheep, and hogs? Are they all kept and fatted in the best and cheapest possible manner? Do you raise as much wheat, corn, rye, oats, &c. per acre, and of the best quality too, as your land is capable of producing? Are your agricultural implements all shaped after the best models, made of the best materials, and procured at the cheapest rates? Are your roads, bridges, and public improvements (for remember farmers have the charge of all these) brought to all the perfection that art can give them? To these questions, and many others, our own observation, as farmers, tells us we must answer in the negative. How often, in the most trifling events in life, do we see the necessity of giving and asking advice? And when interests so momentous may be promoted by, or hazarded for the want of it, surely no one will have the hardihood to say there is not safety in council. In that case, the intelligence and observation of one becomes the intelligence and observation of all. In the different professions, too, of life, we all see and feel the benefits that result from education, and the adoption of a well-regulated system. Heretofore the majority of our farmers have not availed themselves of this plain dictate of good sense; and whilst, on the one hand, you have seen gentlemen farmers who have plenty of loose theory, and not enough of practical knowledge, expend immense sums in imaginary improvement, without an adequate reward, on the other hand, how many farmers do you see, who, for want of system and information, impoverish their land and lessen its value by diminished crops, so that ultimately they sink in ruin! In England there is more said, written, and read on the subject of agriculture, than in any other country in Europe. The consequence is, that they have a well-regulated system, and the immense benefits derived from it may be seen from the fact, that they raise double and triple the quantity of grain from the acre that we do. In that, we must try to imitate her example; for, believe us, the time will soon come when we will have to compete with her, and all Europe too, in all their agricultural productions. Let us endeavor to do it successfully; for our climate is better—our soil may be made as productive—our farmers ought to be as industrious; we have all the means and appliances. It is only to understand how cause produces effect; that is, the operation of simple principles upon practical farming, carefully conducted and thoroughly understood—and we shall be able to make our county one of the best cultivated, and, what always follows, one of the wealthiest in the State.

Prompted by these considerations, we propose a meeting in Hudson, on Saturday the 23d of February inst., at 11 o'clock A. M., at the house of William B. Flagler, of all who take an interest either in agriculture, horticulture, manufactures, or the mechanic arts, for the purpose of forming a Society in the county of Columbia, for the promotion of all these objects.

W. H. Wilson, Clermont,
W. B. Ludlow, Claverack,
J. P. Beekman, Kinderhook.

February 9, 1833.

P. S.—There is still left in the hands of the Treasurer of the former Agricultural Society of this county a small fund to be disposed of as a new Society (should one be formed) shall direct.

NEW-YORK LEGISLATURE.—On the 24th ult. Mr. Stevens presented a petition of the Saratoga County Agricultural Society, for the promotion of Agriculture, Horticulture, and the Domestic Arts, and also for the establishment of an Agricultural Seminary.

INFLUENCE OF CLERGYMEN IN PROMOTING RURAL IMPROVEMENTS.—The moral and happy effects flowing from improvements in any particular refined or useful art, depend in a very considerable degree on the character and station of those who are instrumental in producing the improvements. Permanent salutary influence in society is acquired by a connection with and a devotion to some undertaking or calling calculated either to elevate the character or ameliorate the condition of mankind. Let the advancement of human learning, and of every refined and useful art, be consigned to the protection of the unprincipled and vicious, and you throw around vice—very unnaturally indeed—a halo of glory; you erect to it imperishable monuments. On the other hand, let us couple, for instance, clergymen and the rural arts. Virtue and religion are associated with our most pleasant thoughts. We look upon clergymen as benefactors, and would wish to extend their influence and to perpetuate their remembrance. Through their agency rural life is rendered comparatively unalloyed.

The following we take from Mr. John Barstow's address before the West Somerset Agricultural Society. In speaking of agricultural associations, he says:

At the head of another in Massachusetts is the Governor of a powerful commonwealth, a man of science, of great practical wisdom, a practical farmer, who guides at the same time his own plough and the ship of State. All classes of citizens in that state are enlisted in this enterprize; and in the foremost ranks are to be found the clergy. This order of men have ever been not only the patrons, but the able supporters and advocates of an improved agriculture. In many instances they have led the way to a better state of things by their writings, their influence and example. It was by the ministers of four towns in the county of Worcester, that one of the oldest societies was formed. I well remember the interest that was taken by the inhabitants within its limits; how often, and how much the subject was talked over, and how soon it was before there was but one opinion in regard to the benefits to be derived from such societies. At the present day very many of the ministers of religion are among the best farmers. They receive as many premiums in proportion to their numbers as any order of men. They have taken this interest from their love of rural life—from a conviction of the duty—because of the influence they know an improved agriculture will have on a society—from a firm persuasion that no calling is better calculated to enrich and ennoble the mind, and teach the people of their charge "to look through Nature up to Nature's God."

AGRICULTURE IN MICHIGAN.—Governor Porter, in his Message to the Legislative Council, thus alludes to the subject of agricultural improvement:

"Representing, as you do, a country peculiarly adapted to agriculture, and the production and rearing of live stock, it is suggested for your consideration, whether encouragement would not be given to the industrious and enterprising farmers who compose so large a proportion of our population, if provisions were made by law for the establishment of one or more agricultural societies in this territory. Many of our citizens while residing in a neighboring state have experienced the good effects resulting from these societies. My own observation and experience induce the belief that, under proper regulations, great advantages would be derived from them.

APPLES FOR HOGS.—It may be of service to some of our agricultural readers to call their attention to this subject at this season. It is generally known that hogs will thrive and even fatten on sweet apples. A writer in the Genesee Farmer states, that a farmer who purchased a farm with a large portion of orcharding, collected hogs in proportion to his fruit and fed them on apples, from the time of beginning to ripen until the next spring, when they were sold at an advance of *five hundred dollars*.—Many farmers would find it to their advantage to occupy broken lands, and that which is difficult to till, with apple trees grafted with the sweet varieties. It will be recollected that apple orchards on even northern declivities succeed well, particularly if attention is given to their culture. A little time and expense given to this subject during the spring months may very considerable enhance the value of a farm in the course of five or six years.

SEEDS OF GRAPES.—Mr. Loubat has promised to send us a quantity of grape seeds obtained from his foreign vines on Long-Island. It has been suggested by some, that our only hope of getting a good variety of grapes of foreign origin for this climate is from the seed. As some of our subscribers may wish to try an experiment that will be attended with no expenditure, we will do up and deposit at our office papers of seeds for those who choose to call for them.

PURE WATER FOR COWS.—Agricultural writers agree upon the propriety of giving pure water to domestic animals, particularly to pregnant cows. Filthy, impure water causes abortion, engenders a bad udder, redwater, scouring, diminishes the quantity of milk, and injures the quality of the butter and cheese.

MUD WALLS AND FENCES.—In newly settled countries it is common to make the walls of their houses of clay well mixed with straw, or hay, cut to the length of six to fifteen or twenty inches. Last fall we walled up one end of a green-house, 17 feet wide, with this mixture. It saves the expense of laths, and if you choose, of plastering. Common soil, free from stones of any considerable size, will answer. Pieces of sticks or rough boards are securely fastened between the joists, to prevent the mixture from falling or becoming loose. These pieces should occur at every six or ten inches, as the wall is built up. If narrow strips of board are nailed perpendicularly at the edges of the joists, the cross pieces can be easily secured behind them and firmly pressed into the mixture. After the wall is dry, it is cut smooth with a sharp spade, and then plastered or merely white-washed. Walls thus made are very firm and warm.

The thought has occurred to us that cheap and substantial fences might be made in something of a similar manner. If necessary to prevent injury from frost, let a trench of suitable width be dug, from one to two feet, and filled with stone. Drive stakes into the ground, secured at the top at a proper distance apart, and lay planks inside as they are wanted, or prepare a box or mould, of the desired shape of the fence, made of planks that can be easily taken apart. Into this put a thick layer of soil or clay well mixed with straw, hay, or litter of any kind, and, if convenient, a layer of coarse sand, stone, or brush, well pressed or pounded into the softer mixture. If the weather is fair remove the planks, and proceed with another length. The top of the wall should be protected from rains by laying boards or slabs on the tops. It is possible that the top might be preserved from injury by being raised up into an angle. This wall could be white-washed every season, or it might be plastered.

The above thoughts are thrown out to solicit suggestions, and to induce some to make experiments. Fences made of earth heaped up and covered with sod are not uncommon, particularly on plains of Long Island.

Dr. J. W. Smith suggests, in the Genesee Farmer, a pebble stone fence of a thin layer of mortar, made of twelve parts of coarse sand to one of unslacked lime, alternated with a layer of stones. He thinks, when the materials are convenient, that such a fence can be made for one dollar and twenty-five cents per rod, and that it would last for centuries.

FARMER'S CHRONICLE.—This is a weekly periodical in the newspaper form, conducted by Messrs. Henkle and Cushing, published at Springfield, Ohio. About one-fourth of its contents is devoted to rural subjects, the remainder to news and miscellany. Its merits demand an extensive circulation; and if the farmers of Ohio are only *indifferent* and not *opposed* to their own improvement, perseverance on the part of the publishers and editors will render the Chronicle a public benefit to the Western country. We extract the following challenge:

It has been objected to the Chronicle, that its agricultural editor is only a *book farmer*, and not a practical agriculturist. It is true that he does not cultivate a farm of 500 acres, nor even 100; but to prove his *faith* by his *works*, he will give a premium of at least one volume of the Chronicle to any farmer or gardener in Clark county, who shall *beat* him in the growth of the majority of the following articles the approaching season:

Early crops: potatoes, beans, peas, radishes, lettuce, turnips, corn, cabbages, squashes, cucumbers, beets, pie-plant.

Later crops: water-melons, mush-melons, cantelopes, citrons, tomatoes, cauliflower, broccoli, mangel wurtzel, ruta baga, salsafy, carrots, parsnips, celery, sweet potatoes, winter cabbages, cow-cabbage; all of which (with one or two exceptions) the editor cultivated last year, and many other articles, and in all of them, with the blessing of Providence, he will try to excel his neighbors next season.

KENNEBECK FARMER.—An agricultural periodical, in the quarto form, under the editorial charge of E. Holmes, has recently issued from the press of W. Noyes & Co. Winthrop, Maine. We are glad to see indications of an increasing taste for rural pursuits 'down east.' We hope and trust much good will be done.

ANTHRACITE COAL ASHES.—*Mr. Fleet*: Sir, A gentleman residing on the Hudson river is desirous of knowing the effect of *Anthracite Coal Ashes, on different soils*—where it can be

used to advantage, and where prejudicial! Not having been able to get any satisfactory information on this subject, he solicits, through this channel, a communication from those who may have made experiments on the above as manure, and which will prove very acceptable to

MANY FARMERS.

Remarks.—We believe it belongs to Mr. T. Bridgeman to give 'Many Farmers' information on this subject.

Fibrous Plants. By H. PERRINE, U. S. Consul at Campeachy. To the Editor of the New-York Farmer and American Gardener's Magazine.

Consulate U. S. A. Campeche, Jan. 14, 1833.

DEAR SIR,—I trust that my various communications from Sisal and this port have reached you, although they were forwarded by indirect conveyance. Yesterday the first vessel direct from the United States, (the merchant schooner Josefa,) was announced, and this morning I received the newspapers which contained an account of the horrible events in South Carolina—horrible to an American resident of this theatre of civil war, when anticipating the possibility of similar anarchy in his own blessed country. Let every citizen of the United States who is discontented on account of the errors or abuse of his own State or National Government—let him but pass one month in any of the miscalled republics of Spanish America, and he will return with an increased admiration of our happy institutions. Cannot South Carolina borrow from Mexico any fruit but its bloody anarchy? She *has* transplanted from the Old Continent the rice and the cotton which gave prosperity and peace to her inhabitants; and she *can* introduce from this adjoining section of the New World the Cassave and Sosquil, or the bread and cloth materials of analogous climates, which will restore their wealth and tranquillity.

By my statement of the experiment made on the sandy shore of Sisal with the cultivated Sacqui, you have seen that the Agave Sisalana is adapted to the most sterile soils and most exposed situations, and yields a much greater reward to the cultivator than any object of agriculture now existing in the United States. I am happy to state further that on the almost naked rocks in the vicinity of this city, the cultivated Yasqui which I caused to be planted about three years since, is now furnishing a second prop of its smooth edged leaves, from which is extracted the "greenish henequen."

I have the still greater satisfaction to add, that the young plants, of which hundreds are born in the centre stalk of the parent, 25 to 30 feet high, which I had placed in a bed during the spring of 1830, are now transplanted into a lot where they appear to rival in vigor the shoots which proceed directly from the roots of the Agave, which were the only ones heretofore used by the natives to form other fields.

The interest which I have manifested regarding these fibrous plants has caused the formation of a company to promote their cultivation—a new epoch in the history of Yucatan, which nothing but jealousy could have effected, and at which I rejoice, notwithstanding the motive which has stimulated these people to this extraordinary exertion. From their "projecto" I extract what follows: 1st, That in the third year from the time of planting the shoots, each Agave will yield in two cuttings annually at least four pounds of Sisal hemp; 2d, That every two years ten shoots or young agaves may, or must be, extracted from the space around each mature plant; 3d, That in the third year and every year afterwards, 36,000 plants will yield 1,440 quintals, which at $6 the quintal equals $8,640.

Yours, respectfully, H. PERRINE.

SHEEP.—*Mr. Fleet:* I have heard something of a breed of sheep, not long I believe in this country, called, I think, Cotswold. Can you inform me as to their particular properties, the section of country they are best calculated for, where they may be purchased, and at what price? Information will be thankfully received by

A SUBSCRIBER.

New-Haven, February, 1833.

Remarks.—At page 305, vol. v, of the New-York Farmer, is a communication from Mr. J. W. Smith, giving an account of the importation of seven rams and four ewes of the Cotswold breed, by Mr. Samuel Eccles of St. Thomas, London District, Upper Canada. One of these was bought by Mr. Parmley, of New-York, one by Mr. Dunn, of Albany, several by Mr. John Brientnall, of Goshen, Orange county, N. Y. The remainder Mr. Eccles has reserved for breeding. This breed originated on the Cotswold Hills, in the counties of Gloucester and Oxford, England. "The land," says Mr. Smith, "is poor, and the climate cold, consequently the sheep live hard, particularly in winter; they are a very ancient breed, and never have been crossed with any other sort; and till within the last ten years much neglected. The Cotswold sheep are the largest, have the most and longest stapled wool, and the best constitutions of any sheep in England; they will, when fat, weigh from 60 to 70 pounds per quarter, and will cut from 10 to 14 pounds of wool each." Mr. Smith recommends them for improving the Dishley and our common breeds, and not the Merino. In the edition of the Encyclopedia of Agriculture for 1825, we do not find the Cotswold breed mentioned. They must have, as Mr. Smith states, grown into repute since that date. We do not exactly know the prices, but believe from 50 to 100 dollars were given for good rams.

BALTIMORE, Feb. 11, 1833.

MARYLAND HORTICULTURAL SOCIETY.—*Sisal Hemp—Cantaloupe Melon.*—Dear Sir: I have the honor to inform you that at a meeting of the Maryland Horticultural Society, held the 9th inst. you were unanimously elected an honorary member.

Enclosed is a letter for Dr. Perrine, announcing to him *his* election as an honorary member, which I request you to forward.

I shall immediately recommend to the notice of the Society, your letter relating to the culture of Sisal Hemp, with the two letters of Dr. Perrine, on the same subject, which I read with much pleasure in 2d No. of your paper. We shall always be obliged to you for any suggestions which may tend to direct our labors into the most profitable channel.

At our last meeting, we received a *winter* canteloupe melon, presented by Mr. H. Thompson, who had received it from Malaga during last Autumn. It had been plucked in September; was in good preservation until the 9th inst when it was cut and found to be delicious, with a rich nutmeg flavor. This individual was about 9 inches long, about 15 inches in circumference, the flesh firm, white and in large quantity, being near two inches thick, between the rind and the internal cavity; the rind scarce thicker than an orange peal. Externally the fruit is of a neat oval shape, of a dark green color, a little yellowish at the apex, skin quite smooth. The seeds have been carefully preserved. I know not if this slight account be o any interest to you; *possibly* it may, therefore I give it. The fruit, if we can succeed in cultivating it, will certainly be an acquisition from its property of keeping sound, like a winter apple, until this season of the year.

If you find it agreeable, I will occasionally send you sketches of our proceedings, which you may use or not, as you think proper. Perhaps you may be able to pick a few grains from the chaff. Very respectfully, &c. &c.

H. F. DICKEHUT, Cor. Sec.

S. FLEET, Esq.

ANNUAL MEETING OF THE AGRICULTURAL SOCIETY.—We have received the following brief extract from the minutes of the proceedings:

Thursday, February 14.—AMBROSE SPENCER, Vice-President, in the Chair; JESSE BUEL, Secretary. Mr. Buel, from the Committee on that subject made an interesting report, containing a plan in detail for an Agricultural School, to be established on a farm to be purchased for that purpose, with estimates of expense.

Resolved, That a Committee be appointed to prepare a Memorial to the Legislature for aid to the amount of $100,000.

A communication was received from Le Ray De Chaumont, late President of the Society, declining a re-election.

Ambrose Spencer also declined a re-election as Vice-President. Adjourned to meet Friday.

Friday, February 15.—Met pursuant to adjournment. An able and interesting Address was delivered by Dr. Beck, of which a copy was ordered to be requested for publication.

Several interesting communications from County Agricultural Societies, and from individuals, were read.

The Society transacted considerable business, and proceeded to the choice of officers for the ensuing year.

Vincent Le Ray De Chaumont stated that J. Le Ray De Chaumont, late President, declined a re-election, on account of an intended absence for the ensuing year. Judge Spencer also declined a re-election as Vice-President. The following officers were then chosen.—

Jesse Buel, *President;* Gerrit Wendell, of Washington county, William Jay, of West-Chester county, Vincent Le Ray De Chaumont, of Jefferson county, Henry W. Delavan, of Saratoga county, *Vice-Presidents;* John T. Bacon, *Recording Secretary;* J. P. Beekman, *Corresponding Secretary;* Charles R. Webster, *Treasurer;* John Townsend, of Albany, Alexander Walsh, of Lansingburgh, Horatio Hickock, of Rensselaer, *Executive Committee.*

The only change in the General Committee for New-York, was to substitute Dr. Rhinelander for Anthony Dey.

AMERICAN HEMP.—At page 88 our readers will find an interesting article on this important subject, from the pen of the Honorable Henry Clay.

Could the agricultural papers in the United States more frequently obtain communications directly from eminent and influential men, their circulation, value and influence, would be greater.

The following introductory remarks are from the American Farmer. The communication of Mr. Clay was made to the Western Agriculturist.

We would request the attention of agriculturists to the excellent paper on the culture and preparation of hemp, in the present number of the Farmer, from the pen of the Hon. Henry Clay. The plan recommended by stacking and sweating is getting more generally into favor in the west, and appears to answer an admirable purpose. We have seen a good deal of the hemp thus prepared. About three years ago, we received a lot of it from Kentucky, which we sold at a price approaching to that of the best Russia. In color, strength of fibre, and softness, it appears fully equal to Russia hemp; but whether it will prove, on a fair trial, to be equal of durability, we believe is not certainly known, though so far every thing seems to indicate equality, if not superiority, even in this respect. It is supposed, by some, that there is an acid in the fibre of hemp, which must be got rid of, or it will cause the ropes made of it to rot *internally*, (similar to the dry rot in timber,) and hence that hemp prepared by any of the new and *expeditious* processes will not answer for durable ship rigging; and that the processes of water rotting and stacking and sweating, (according to the plan of Mr. Clay,) either destroy or neutralize this acid. The experiment mentioned by Mr. Clay, in which the ropes were rotten, seems to favor this idea; or rather to confirm the opinion, that there is some principle (whether an acid, an oil, or something else, it matters not) that requires to be corrected by processes similar, as to time and application, to stacking and sweating and water rotting.

We ought to have mentioned, that, in a letter to the Editor of the American Farmer, of recent date, Mr. Clay reiterates the opinion that the sweating process is superior to all others. He has discovered nothing, since the date of his paper, by which the method of culture and management of hemp, as therein given, can be improved; nor has his subsequent experience required him to expunge or amend any part of the process.

BENEFITS OF AGRICULTURAL SOCIETIES.—The attention of our readers is respectfully called to the following testimony of Gov. Roman of Louisiana, in favor of Agricultural associations and experimental farms:

The progress of science has produced a great number of discoveries and new applications which are of the greatest utility in the arts, and in manufactures, which we must adopt in our agriculture, to countervail the effect of the low price of our principal staples. A great number of plans and experiments are put forth continually to the public, which being imperfectly explained, or imperfect in themselves, are unsuccessful in their results and are only tested at great expense, while discoveries which are really useful remain without being carried into operation, or can be successfully applied after a great expenditure of time and labor. In this state of things the establishment of an agricultural society would be of immense advantage to the State, in testing and making known those discoveries and inventions which would be really useful to the arts and to agriculture, and deserving of the encouragement of our citizens. An institution of this kind would have saved a few years since an expense of more than $50,000, which our sugar planters incurred only to test the insufficiency of a new method of making sugar. Under the auspices of a society like this, new sources of industry would be opened, the extraction of oil from the cotton seed, which is now thrown away as useless, and which could be produced in almost any quantity, would produce more than a million of dollars annually. Our farmers would soon learn, that without neglecting the culture of our principal staples they could derive great profit from a multitude of other natural productions, which are now neglected. That it is not their interest that the silk worm should be left to die, without use, in the forests of Louisiana, in which it is born, while in Premont alone the exportation of raw silk in the year 1830 amounts to $25,000,000.

YELLOWS IN PEACHES.—The New York Farmer for February has an article under the head of "Retrospective Criticism on the first series of the New-York Farmer." In treating of the peach he says: "The late Andrew Parmentier, of Brooklyn, recommends fish, and also bruised sorrel, to be put around the tree, to prevent the injury from worms. Dirt heaped up a few inches has the same effect. He thinks the yellows is caused by improper transplanting." This, we think, is calculated to mislead young horticulturists. If there is any to which we may apply the term disease among fruit trees, it is to the yellows. It is capable of being communicated from one tree to another, and the consequence is certain death. In 1830, we procured a limb from a tree which had the yellows, and set a bud in a seedling tree of two years' growth, which was very thrifty. Our neighbor also set one of the buds from the same cion in a young tree, which, until then, had grown well. Both trees gave evident marks of the yellows the next summer, and both have since died. There is no doubt but the disease may be communicated to young trees by pruning them with a knife with which you had been pruning a diseased tree. We do not pretend to account for the manner in which the virus acts, but the fact that it is capable of being communicated by inoculation has been fully demonstrated. Whether it is or is not capable of being communicated by the pollen when the trees are in flower we are not prepared to say. Every possible pains should be taken to prevent its spreading.

REMARKS.—The above is from the Genesee Farmer. We place as much confidence in what Mr. Parmentier *thought* as in the *demonstration* of the Editor of the G. F.—both, in all probability, founded on observations and experiments too limited. We do not suppose the trials of Mr. Goodsell and his neighbor to settle the contagiousness of the yellows any more than the common facts adduced in favor of the contagious nature of those diseases of the animal frame which are not considered so by physicians. More numerous and more varied experiments are requisite. That the disease exists in the sap and is caused by improper culture or by extremes of temperature, many physiologists are agreed in sentiments. The above remarks of the Genesee Farmer do not, we believe, call in question Mr. P.'s opinion of the *cause* of the disease, and we therefore cannot perceive on what grounds his opinion can be said to mislead young horticulturists.

We hope the G. F., as well as our own correspondents, will furnish more facts and observations.

TO DRIVE AWAY RATS.—It is stated in the London Mechanics' Magazine, that tar put around the holes through which rats pass, will cause them to leave the premises. The tar, we suppose, must be put so that the rats may come in contact with it.

NEW-YORK VEGETABLE MARKET, Feb. 26.—Apples, Russets, $1 75 to $2 00; Newtown Pippins, $3 00 per barrel.—Turnips, common, 20 to 25 cents; Russia, 31 cents per bushel. Beets, 37½ to 44 cents per bushel.—Parsnips, 31 to 37½—Carrots, 44—Red Onions, 62, white do. 75 cents per bushel.—Potatoes, 31 to 37½; Kidney, 44; Mercer, 37½.—Cabbages, $2 to $3; best do. $3 to $4.—Hickory Nuts, 88 cts. to $1.—Black Walnuts, 50 cents per bushel.—Chesnuts, $1 25 per bushel.—Cranberries, $3 50 to $4 00 per bushel.

Remarks.—Farmers should remember that most of the above prices are such as are obtained at the market by those who retail. We shall hereafter give the prices as they are obtained by those standing in the market; farmers consequently must calculate what they will obtain by deducting a per centage of profit to the retailer. Markets may be considered as dull.

NEW-YORK PRODUCE MARKET, Feb. 24.—*Ashes*—Sales are effected with difficulty at $4,40 for Pots, and 4,60 to 4,75 for Pearls.

Cotton—The demand is active. Upland 10 to 11¼; Mobile 11 to 12¾.

Flour—Western $6 to 6,37½; Southern 5,50; Rye flour dull at $4,12½.

Grain—Northern Wheat $1,18 to 1,20, Southern 1,14; Rye 88 cts.; Oats 45 to 50; Barley 75; Corn, Yellow and New-Jersey, 65 to 70; Southern 60.

Hemp—Russia, clean, $196 to 200 per ton; Sisal, do.; Manilla $210 to 212; Kentucky 130 to 150 per ton.

Hops—First sort 1832, 32 to 33 cts. per lb.

Provisions—Beef, Mess, city, $8,63 to 9,00; Country, 8,50; Prime, 5,63 to 5,75; Pork, Mess, $13,75; Prime, 10,75; Lard, dull at 6¼ to 8¼.

Wool.—Prices are sustained by purchasers from the Eastern States, by the news from England.

NEW-YORK CATTLE MARKET, Monday, Feb. 25.—At market this day 500 head of Beef Cattle, 40 Cows and Calves, and 800 Sheep—no Hogs.

The Beef Cattle were of good quality and sales were brisk at a small advance upon last week's prices. A few very prime sold at $8 50. Prime Cattle, at from $7 to 7 75; good do. from $6 25 to 6 75; inferior do. from $5 to 5 75.—The whole were sold at an average of $6 75.

Cows and Calves were not much in demand. A few were sold at from $25 to 28.

Sheep—The Sheep market was rather spirited and the whole were readily sold. A few very prime brought $8. Several prime Sheep sold at from $5 75 to 6 50; middling do. from $3 50 to 4 25; inferior do. $2 75 to 3.

FUEL.—*Coal*—Liverpool, per chaldron, $9 00 to $10; Sidney, 9 00 to 10 00; Virginia, 8 50 to 9 50; Schuylkill, per ton, $9 to $10; Lehigh, 8 00 to 9; Lackawana, 8 to 9.

Wood—Hickory, per load, $2 50 to $3 00; Oak, 2 00 to 2 25; Ash, 2 00 to 2 12½; Pine, 1 50 to 2 00; Chesnut, 1 62½ to 2 00; Maple 1 75 to 2 00.

BRIGHTON MARKET—MONDAY, Feb. 18, 1833.—At Market this day 378 Beef Cattle, 12 Cows and Calves, 706 Sheep, and 266 Swine.

Beef Cattle.—The quality of cattle was better than it was last week, but prices for the same qualities were hardly supported; our quotations will vary a little. We noticed one ox only taken for more than $6. We quote prime at $5,50 to 6,00; good at 5,00 to 5,25; thin at 4,25 to 4,75.

Cows and Calves.—We noticed sales at $23, $25, $27,50, $28, $32, and $40.

Sheep.—'Dull,' we noticed one lot taken at $2,58; one at $2,75; one at $3; one at $4; one at $5, and one at $5,60; a few fine Cosset Wethers at $8,25.

Swine.—No lots were sold; about 60 were retailed [some of which were very small] at 5c. for Sows, and 6 for Barrows.